



PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL

U.S. ARMY
MATERIEL COMMAND

— COMMITTED TO PROTECTION OF THE ENVIRONMENT —

ROCKY MOUNTAIN ARSENAL

CONTINGENCY PLAN TASK 09 REVISION 4.1

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ROCKY MOUNTAIN ARSENAL

**CONTINGENCY PLAN
TASK 09
REVISION 4.1**

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For Rocky Mountain Arsenal

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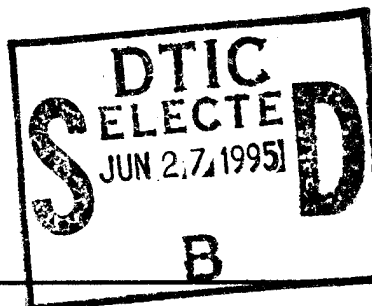


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Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist. <i>A</i>	Avail and/or Special

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SECTION 1

INTRODUCTION

The information contained herein is submitted in accordance with the requirements for a Contingency Plan, as contained in Title 40 Code of Federal Regulations (CFR) Part 264, Subpart D. The intent of Subpart D (Contingency Plan and Emergency Procedures), of RCRA, is to ensure that facilities which treat, store, or dispose of hazardous wastes have established the necessary planned procedures to follow in the event an emergency situation should arise.

This Plan sets forth the procedures and resources which will be used to respond to, and to minimize hazards to, human health or the environment resulting from any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or water from specified areas at Rocky Mountain Arsenal (RMA). These areas include the Central Waste Handling Area (CWhA), the South Plants Decontamination Area (SPDA), and the Basin F Interim Response Action (IRA) structures including the Capped Basin Floor, Ponds A and B, Waste Pile, and the Tank Farm. Activities will be performed by the contractor personnel of Roy F. Weston, Inc. (WESTON), under the management of the Program Manager, Rocky Mountain Arsenal (PMRMA).

In substantive compliance with 40 CFR 264.52(b), this plan constitutes an addition to the Draft Final Contingency Plan for RMA (December 1990) by incorporating the hazardous waste management provisions specific to the CWhA, the SPDA, and the Basin F IRA structures. These areas are subject to applicable provisions of certain Arsenal-wide standard operating procedures which are specific to these operations. Key additional plans are listed below:

- Contingency Plan Rocky Mountain Arsenal Volumes I-IV (December 1990).
- Emergency Response Plan for Chemical Agents Discovered at RMA (SOP 50-1).

The above mentioned plans have been approved for interim use on RMA pending final review and publication. Copies of these documents will be kept on-site at the WESTON field office.

SECTION 2

EMERGENCY COORDINATORS

The individual who detects an emergency situation at the facility should contact a WESTON Emergency Coordinator (EC) listed in Table 2-1 and provide the EC with the information listed in Figure 2-1. WESTON ECs have been supplied with appropriate communication devices to alert them in the occurrence of an emergency (two-way radio and cellular phone). The primary EC will be contacted first; if not available, the alternate ECs should be called in the order listed in Table 2-1.

The WESTON EC will determine if the contingency plan should be implemented and assume the responsibility for further on-site notifications. On-site notifications will be conducted as outlined in the RMA Contingency Plan and the Emergency Notification Plan for Rocky Mountain Arsenal, SOP GC-01 (March 1, 1989). According to these plans, the WESTON EC will notify:

	<u>Work Phone Number</u>	<u>Home Phone Number</u>
• RMA Fire Protection and Prevention Branch	289-0223	NA
• RMA Security	289-0366	NA
• PMRMA - Dave Strang (PMRMA Alternate - Larry DeCet)	289-0506 289-0124	337-0240 420-3251
• WESTON Task Manager (C. Paul Warbinton)	980-6800	972-8764

Once the WESTON EC has reported the incident to the PMRMA, it is the responsibility of the PMRMA personnel to request any needed outside assistance. One of these resources is WESTON and its subcontractors. To access WESTON during an emergency situation occurring at nonroutine hours (nights, weekends, holidays, etc.), the RMA 24-hour security personnel will contact the persons identified, in order in Table 2-2, Table 2-3, and Table 2-4, starting with WESTON's EC.

TABLE 2-1

WESTON EMERGENCY COORDINATORS

Name Title	Home Address Home Phone Number	Work Phone Number
<u>Primary Emergency Coordinator</u> Morey Engle Field Team Manager (FTM)	294 Catamount Ridge Road Bailey, CO 80421 1-838-1059 324-6421 (cellular)	287-6884 or 287-6216
<u>Alternate Emergency Coordinator, 1</u> Phil Card Daily Operations Manager (DOM)	42907 Vista Ridge Parker, CO 80134 841-0676	287-6884 or 287-6216
<u>Alternate Emergency Coordinator, 2</u> Les Barnett Sr. Field Technician	11733 St. Paul Street Thornton, CO 80233 457-2902	287-6884 or 287-6216
<u>Alternate Emergency Coordinator, 3</u> Dick Treat Site Safety Officer (SSO)	9215 Perry Street Westminster, CO 80030 426-7385	287-6884 or 287-6216

- ☒ Location
- ☒ Incident type
- ☒ Source
- ☒ Character of material
- ☒ Estimated quantity and rate of release
- ☒ Aerial extent
- ☒ Equipment involved
- ☒ Intensity of fire or explosion
- ☒ Personnel injuries
- ☒ Other impending emergencies
- ☒ Other possibly affected areas/people
- ☒ Movement direction of spill/vapor/smoke

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WESTON
DESIGNERS/CONSULTANTS

ROCKY MOUNTAIN ARSENAL
Commerce City
Colorado

CONTINGENCY PLAN
INCIDENT DISCOVERY ASSESSMENT
REQUIRED NOTICE INFORMATION

FIGURE
2-1

TABLE 2-2
WESTON EMERGENCY CONTACTS

Name Title	Home Address Home Phone Number	Work Phone Number
C. Paul Warbington Task Manager	5418 S. Swadley Court Littleton, CO 80127 972-8764	980-6800, ext. 312
Michael Witt Project Manager	13719 West 59th Drive Arvada, CO 80003 421-4221	980-6800, ext. 300
Michael Bradshaw Project Safety Officer	122 Stage Coach Trail Elizabeth, CO 80107 646-0173	980-6800, ext. 221

TABLE 2-3
SITE PERSONNEL EMERGENCY CONTACTS

Name Title	Home Address Home Phone Number	Work Phone Number
Morey Engle Field Team Manager	294 Catamount Ridge Rd Bailey, CO 80421 1-838-1059 324-6421 (cellular)	287-6884 or 287-6216
Phil Card Daily Operations Manager	42907 Vista Ridge Parker, CO 80134 841-0676	287-6884 or 287-6216
Dick Treat Site Safety Officer	9215 Perry Street Westminster, CO 80030 426-7385	287-6884 or 287-6216

TABLE 2-4
RMA EMERGENCY CONTACTS

Name Title	Home Address Home Phone Number	Work Phone Number
RMA Fire Protection and Prevention Branch N/A	N/A N/A	289-0223
RMA Security N/A	N/A N/A	289-0369
Lt. Col. Delameter RMA On-Site Emergency Coordinator		289-0441
Dave Strang PMRMA	11756 East Evans Avenue Aurora, CO 80014 337-0240	289-0506
Larry DeCet PMRMA Alternate	11257 West 59th Avenue Arvada, CO 80004 420-3251	289-0124

The WESTON ECs have been selected based on their familiarity with the RMA facility, Contingency Plan, operations, and activities at the facility; the location and characteristics of wastes handled; the location of records within the facility; and the facility layout. PMRMA is responsible for off-post notification. Listed in Table 2-5 are additional emergency contacts that may be needed by WESTON personnel. Listed in Table 2-6 are additional emergency contacts that may be needed at RMAs request.

TABLE 2-5
EMERGENCY CONTACTS
For Use by WESTON Personnel

Emergency	Organization/Agency	Emergency Number
Injury	RMA Fire Protection and Prevention Branch Presbyterian Hospital - Aurora University Hospital	289-0223 363-7200 270-8901
Fire/Explosion	RMA Fire Protection and Prevention Branch	289-0223
Hazardous Material Spill or Release	RMA Fire Protection and Prevention Branch West HazMat (Response Equipment as approved by PMRMA)	289-0223 792-2535
If Spill Reaches Navigable Water	RMA Fire Protection and Prevention Branch West HazMat (Response Equipment as approved by PMRMA)	289-0223 792-2535
Natural Disaster	RMA Fire Protection and Prevention Branch	289-0223

TABLE 2-6

EMERGENCY CONTACTS
For Use by RMA Personnel

Emergency	Organization/Agency	Emergency Number
Injury	Poison Control Center-Denver Colorado Dept. of Health - Environmental Emergencies	629-1123 377-6326
Fire/Explosion	Commerce City Fire Department Arson Hotline F.A.A. - Local Coordinator	911 892-7766 355-1610
Hazardous Material Spill or Release	U.S. EPA Region VIII Emergency Response - Denver FEMA Emergency Coordinator CHEMTREC National Response Center Commerce City Fire Department Colorado Dept. of Health - Environmental Emergencies Adams County Emergency Preparedness	24 hour emergency No. 293-1788 235-4800 or after hours 235-4900 1-800-424-9300 1-800-424-8802 911 377-6326 289-5441
If Spill Reaches Navigable Water	U.S. EPA Region VIII - Emergency Response - Denver National Response Center CDH - Environmental Emergencies	24 hour emergency No. 293-1788 1-800-424-8802 377-6326

SECTION 3

IMPLEMENTATION OF THE CONTINGENCY PLAN

The decision to implement the Contingency Plan depends on whether an imminent or actual incident could threaten human health or the environment. The purpose of this section is to provide guidance to the Emergency Coordinator (EC) in making these decisions by providing decision-making criteria.

In general, the contingency plan will be implemented in the following situations:

- Fire and/or Explosion
 - a. A fire causes the release of toxic fumes that could threaten human health or the environment.
 - b. The fire spreads and could possibly ignite materials at other locations on site or could cause heat-induced explosions.
 - c. The fire could possibly spread to off-site areas.
 - d. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
 - e. An imminent danger exists that an explosion could ignite other hazardous wastes at the facility.
 - f. An imminent danger exists that an explosion could result in the release of toxic material.
 - g. An explosion has occurred.
- Spills or Material Release
 - A. Any leak or spill that releases Basin F liquid or leachate into the environment.
 - B. The spill could result in release of sufficient flammable liquids or vapors to cause a fire or gas explosion hazard.
 - C. The spill could cause the release of significant quantities of toxic liquids or fumes.
 - D. The spill cannot be contained on site, resulting in off-site soil contamination and/or ground or surface-water pollution.
 - E. A spill that could result in the release of a hazardous substance in excess of a reportable quantity (RQ) as defined in 40 CFR Section 302.4.

- Floods

- a. The RMA facility is not located in a 100-year flood plain, therefore, floods are not anticipated.

Specific incidents for each WESTON area of operation requiring the implementation of the Contingency Plan are identified in the following sections. Reportable Quantities (RQs) have been identified for contaminants known to exist within each of these areas of operation. RQs have been identified in this Contingency Plan for the main purpose of identifying situations to PMRMA in which they must notify EPA Region VIII. RQs may also guide the EC in implementing specific procedures within this Contingency Plan.

3.1 CENTRAL WASTE HANDLING AREA

Implementation of the Contingency Plan at the CWA can result from various catastrophic events: fire/explosion, breach of containment structures, effects of external forces, or human exposure.

3.1.1 Containment Failure or External Forces

<u>Event</u>	<u>Foreseeable Consequence</u>
Fire/Explosion	Major release of hazardous substances
Containment Failure	Major spill
Tornado, High Wind	Building failure, major spill
Vandalism	Major spill

3.1.2 Human Exposure

<u>Event</u>	<u>Foreseeable Consequence</u>
Worker Mishap or Accident	Personnel exposure to hazardous substances

3.1.3 Reportable Quantities

Within the current inventory of the CWHHA there are several types of investigation derived wastes. These include PPE, soils, trash, laboratory wastes, and miscellaneous others. Based upon the analytical results from the RI/FS activities, which generated these wastes, the concentration of contaminants in these wastes are in parts per million (ppm) levels.

The RQs for these contaminants are all presented in pounds ranging from 1 pound to 5,000 pounds and are based on 100% concentration of these contaminants or technically pure grades. Therefore, based on the adjustment of contaminants from PPM levels to 100% concentration levels, the amount of material released to equal an RQ would be several thousand or hundred thousand gallons.

The generation or movement of these wastes occur in a manner in which an RQ of these contaminants would never be exceeded if a release would occur. Therefore, RQs for the wastes in inventory at the CWHHA have not been calculated and PMRMA would not be required to notify EPA Region VIII for an RQ release from any incident involving the current inventory in the CWHHA (with the exception of Basin F materials stored in Buildings 788 and 793).

3.2 SOUTH PLANTS DECONTAMINATION AREA

Implementation of the Contingency Plan at the SPDA can result from various catastrophic events: fire/explosion, tank failure, equipment failure, breach of containment structures, effects of external forces, or human exposure.

3.2.1 Containment Failure or External Forces

Event

Tank Failure
Fire/Explosion

Foreseeable Consequence

Major or minor tank leakage or spill
Major release of hazardous substances

Containment Failure
Tornado, High Wind
Vandalism

Major container(s) spill
Building failure, major spill
Major or minor, tank(s) or container(s) spill

3.2.2 Human Exposure

<u>Event</u>	<u>Foreseeable Consequence</u>
Containment Failure	Personnel exposure to hazardous substances
Worker mishap or accident	Personnel exposure to hazardous substances

3.2.3 Reportable Quantities

Normal day-to-day operations at the SPDA could result in the release of hazardous substance mixture. This includes the transfer of the wastewater to the south plants pre-treatment area from the 11,000-gallon tanks located at the SPDA. Therefore, hazardous substance RQs have been calculated based upon the contaminants known to exist within this wastewater and based upon the highest known concentration of each contaminant in the overall waste mixture.

The results of these calculations are presented in Table 3-1. Based upon these results, the minimum amount of wastewater required to be released to equal an RQ of 10 pounds for chloroform is 373,383 gallons. Therefore, it is highly unlikely that an RQ could ever be released since the largest amount of liquid held at the SPDA is 30,000 gallons.

3.3 BASIN F IRA STRUCTURES

Implementation of the Contingency Plan at Basin F IRA structures can result from various effects: tank failure, equipment failure, breach of containment structures, effects of external forces, or human exposure. Any amount of Basin F liquid released to the environment will require the FTM/EC to implement the Contingency Plan.

TABLE 3-1

These concentrations were obtained from the 7 June 1991 RMA Laboratory Report on the analysis of SPDA wastewater. The submittal date for the wastewater analyses was 19 April 1991.

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3.3.1 Containment Failure or External Forces

<u>Event</u>	<u>Foreseeable Consequences</u>
Lightning strike on tank farm	Major tank spill
Tank weld failure	Major tank spill
Valve or transfer pipe failure	Major or minor tank spill
Vandalism	Major tank spill; minor tank spill; Pond A cover failure
Tornado, High Wind	Major tank spill; Pond A cover failure
Shifting Soils	Major or minor tank spill; Pond A containment failure; waste pile cap failure
Other events leading to a breach of containment	Major or minor tank spill; Pond A containment failure; waste pile cap failure
Truck with bed-mounted tank overturns	Basin F leachate release into the environment

3.3.2 Human Exposure

<u>Event</u>	<u>Foreseeable Consequences</u>
Containment failure or external forces	Personnel exposure to hazardous substances
Work mishap or accident	Personnel exposure to hazardous substance

3.3.3 Reportable Quantities

Normal day-to-day operations at areas involving Basin F liquid or leachate could result in the release of hazardous substance mixture. This includes the transfer of Basin F leachate from the waste pile to Pond A. Therefore, hazardous substance RQs have been calculated for the Basin F liquid and Basin F leachate for the contaminants known to exist within these waste streams and based upon the highest known concentration of each contaminant in the overall waste mixtures. RMA must notify the Environmental Protection Agency (EPA) Region VIII if a release to the environment equals or exceeds the RQs, in accordance with 40 CFR § 302.4..

The results of these calculations are presented in Tables 3-2 and 3-3. Based upon these results, and as highlighted on these tables, the minimum amount of liquid required to be released to equal an RQ is:

Basin F liquid - 10 gallons released would equal the RQ of 100 pounds for corrosivity;

Basin F leachate - 4,132,966 gallons released would equal the RQ of 10 pounds for chloroform.

For the purposes of operations at Basin F IRA structures, the Contingency Plan will be implemented when any Basin F liquid or leachate is released into the environment. If the release is secure in a containment area and is not immediately dangerous to human health or the environment the FTM/EC will have discretion in implementing the Contingency Plan.

TABLE 3-2

BASIN F CONTAMINANTS AND RQs

Basin F Compound/Parameter	Highest Known Concentration ¹ (mg/ℓ)	RQ (pounds)	Amount of Basin F Liquid Required to Equal the RQ (gallons)
Aldrin	2.9	1	41,330
Isodrin	2.0	1	59,928
Dieldrin	0.5	1	239,712
Endrin	0.6	1	199,760
Dithlane	0.1	Not listed	NA
ppDDE	0.1	1	1,198,560
ppDDT	0.3	1	399,520
CPMSO	25.8	Not listed	NA
COMSO ₂	200.0	Not listed	NA
Hexachlorocyclopentadiene	1.9	10	630,821
Atrazine	0.2	Not listed	NA
Malathion	0.8	100	14,982,000
Parathion	0.1	10	11,985,600
Supona	0.3	Not listed	NA
Vapona	0.9	Not listed	NA
Benzene	0.008	10	149,820,000
Bromomethane	0.1	1000	1,198,560,000
Chloroform	0.003	10	399,520,000
Toluene	0.01	1000	11,985,600,000
4-Nitrophenol	18.0	100	665,867

TABLE 3-2 (CONTINUED)

BASIN F CONTAMINANTS AND RQs AREA

Basin F Compound/Parameter	Highest Known Concentration ¹ (mg/ℓ)	RQ (pounds)	Amount of Basin F Liquid Required to Equal the RQ (gallons)
DIMP	123.0	Not listed	NA
DMMP	2000.0	Not listed	NA
Ammonia	60,900.0	100	197
Urea	143,000	Not Listed	NA
Dimethylsulfide	120	Not Listed	NA
Calcium	270	Not listed	NA
Potassium	2900	Not listed	NA
Sodium	61,000	NA ²	NA
Chloride	160,000	Not listed	NA
Fluoride	170	Not listed	NA
Sulfate	47,000	Not listed	NA
Nitrate	1300	Not Listed	NA
Nitrogen	104,400	Not listed	NA
Phosphorus (total)	16,200	NA ²	NA
Aluminum	5.5	Not listed	NA
Antimony	1.1	**	NA
Arsenic	3.9	**	NA
Barium	0.4	Not listed	NA
Boron	21.0	Not listed	NA

TABLE 3-2 (CONTINUED)

BASIN F CONTAMINANTS AND RQS AREA

Basin F Compound/Parameter	Highest Known Concentration ¹ (mg/ℓ)	RQ (pounds)	Amount of Basin F Liquid Required to Equal the RQ (gallons)
Cadmium	50.0	**	NA
Chromium	50.0	**	NA
Cobalt	0.93	Not listed	NA
Copper	5860	**	NA
Iron	75	Not listed	NA
Lead	74	**	NA
Magnesium	250	Not listed	NA
Manganese	7.2	Not listed	NA
Mercury	340	**	NA
Molybdenum	2.6	Not listed	NA
Nickel	34	**	NA
Vanadium	3.0	Not listed	NA
Zinc	23	**	NA
Cyanide	1.55	10	773.265
Corrosivity	***	100	10

¹ These concentrations were obtained from Table 5-3 presented in the Contingency Plan for RMA-Revision 1, September 1990.

NA Not Applicable

TABLE 3-2 (CONTINUED)
 BASIN F CONTAMINANTS AND RQs AREA

NA² The RQ is for the elemental metal form. The Basin F contaminant is an ion and not a metal, therefore the RQ is not applicable to the Basin F liquid.

** Indicates that no RQ is being assigned to the generic or broad class.

*** The Basin F liquid exhibits the RCRA characteristic of corrosivity. The RQ was calculated based upon Basin F's liquid specific gravity of 1.24. Therefore the first step in calculating the Basin F's liquids RQ is to convert the specific gravity of 1.24 to density as follows:

$$\text{Specific Gravity (1.24)} = \frac{\text{density of Basin F liquid (lb/ft}^3\text{)}}{\text{density of water (62.4 lb/ft}^3\text{)}} \quad \text{Therefore, the density of Basin F liquids is 77.38 lb/ft}^3$$

$$\text{To convert lb/ft}^3 \text{ to lb/gal multiply by } \frac{1 \text{ ft}^3}{7.46 \text{ gallons}}; \text{ therefore: } 77.38 \frac{\text{lb}}{\text{ft}^3} \times \frac{1 \text{ ft}^3}{7.46 \text{ gallons}} = 10.37 \text{ lb/gal}$$

With this calculation of density plus the RQ of a corrosive liquid (100 lbs) from 40 CFR 302.4, the RQ of the Basin F liquid with respect to density can be calculated with the following equation:

$$\text{RQ Volume of Liquid (gallons)} = \frac{\text{RQ (lbs)}}{\text{Density of Basin F Liquid (lbs/gal)}}$$

$$\text{Therefore, the RQ Volume of liquid (gallons)} = \frac{100 \text{ lbs}}{10.37 \text{ lbs/gal}} = 9.64 \text{ gallons} \sim 10 \text{ gallons}$$

TABLE 3-3

BASIN F LEACHATE CONTAMINANTS AND RQs

Basin F Compound/Parameter	Highest Known Concentration ¹ (mg/ℓ)	RQ (pounds)	Amount of Basin F Leachate Required to Equal the RQ (gallons)
DMMP	0.036	Not listed	NA
CPMSO2	0.02	Not listed	NA
Aldrin	0.0006	1	1,997,600,000
1,1,1-Trichloroethane	0.11	1000	1,089,600,000
1,1,2-Trichloroethane	BDL	100	NA
1,1-Dichloroethene	0.059	100	203,145,763
1,1-Dichloroethane	BDL	1000	NA
1,2-Dichloroethene	BDL	1000	NA
1,2-Dichloroethane	BDL	100	NA
1,2-Dichloropropane	BDL	1000	NA
1,3-Dimethylbenzene	0.044	1000	2,724,000,000
2-Chloroethyl vinyl ether	0.116	1000	1,033,241,379
Benzene	BDL	10	NA
Carbon Tetrachloride	0.075	10	15,980,800
Methylene Chloride	1.1	1000	108,960,000
Bromoform	BDL	100	NA
Chloroform	0.29	10	4,132,966
Chlorobenzene	0.096	100	124,850,000
Dicyclopentadiene	BDL	Not listed	NA
Ethylbenzene	BDL	1000	NA

TABLE 3-3 (CONTINUED)

BASIN F LEACHATE CONTAMINANTS AND RQS

Basin F Compound/Parameter	Highest Known Concentration ¹ (mg/l)	RQ (pounds)	Amount of Basin F Leachate Required to Equal the RQ (gallons)
Toluene	0.046	1000	2,605,565,217
Tetrachloroethene	0.053	100	266,143,396
Trichloroethene	0.05	100	239,712,000
Xylene	0.036	1000	3,329,333,334
Calcium Total	0.27	Not listed	NA
Copper Total	0.854	**	NA
Sodium Total	128.0	NA ²	NA
Zinc Total	0.007	**	NA

1 These values were obtained using the highest concentration determined to be found in the Waste Pile primary and secondary sumps. These values were presented in the "RMA Basin F IRA Final Analytical Data Summary Report for FY90".

BDL Below Detection Limit.

** Indicates that no RQ is being assigned to the generic or broad class.

NA Not Applicable.

NA² The RQ is for the elemental metal form. The Basin F leachate contaminant is an ion and not a metal, therefore the RQ is not applicable to the Basin F leachate.

TABLE 3-3 (CONTINUED)

BASIN F LEACHATE CONTAMINANTS AND RQs

NA² The RQ is for the elemental metal form. The Basin F contaminant is an ion and not a metal, therefore the RQ is not applicable to the Basin F liquid.

** Indicates that no RQ is being assigned to the generic or broad class.

*** The Basin F liquid exhibits the RCRA characteristic of corrosivity. The RQ was calculated based upon Basin F's liquid specific gravity of 1.24. Therefore the first step in calculating the Basin F's liquids RQ is to convert the specific gravity of 1.24 to density as follows:

$$\text{Specific Gravity (1.24)} = \frac{\text{density of Basin F liquid (lb/ft}^3\text{)}}{\text{density of water (62.4 lb/ft}^3\text{)}}$$

Therefore, the density of Basin F liquids is 77.38 lb/ft³

$$\text{To convert lb/ft}^3 \text{ to lb/gal multiply by } \frac{1 \text{ ft}^3}{7.46 \text{ gallons}}; \text{ therefore: } 77.38 \frac{\text{lb}}{\text{ft}^3} \times \frac{1 \text{ ft}^3}{7.46 \text{ gallons}} = 10.37 \text{ lb/gal}$$

With this calculation of density plus the RQ of a corrosive liquid (100 lbs) from 40 CFR 302.4, the RQ of the Basin F liquid with respect to density can be calculated with the following equation:

$$\text{RQ Volume of Liquid (gallons)} = \frac{\text{RQ (lbs)}}{\text{Density of Basin F Liquid (lbs/gal)}}$$

$$\text{Therefore, the RQ Volume of liquid (gallons)} = \frac{100 \text{ lbs}}{10.37 \text{ lbs/gal}} = 9.64 \text{ gallons} \sim 10 \text{ gallons}$$

SECTION 4

EMERGENCY RESPONSE PROCEDURES

The response procedures will be divided into three phases: (a) Pre-Incident Phase; (b) Incident Phase; and (c) Post-Incident Phase.

4.1 PRE-INCIDENT PHASE

Prior to initiating non-routine fieldwork, WESTON will conduct pre-contingency planning. Contingency response personnel will be organized and assigned responsibilities. Site personnel will be briefed on identifying and avoiding potential hazards associated with the project. Contingency communication and evacuation protocols will be established. Contingency characterization and notification procedures will be outlined. At least one person trained in emergency medical treatment will be on site at all times as will contingency monitoring equipment and personnel familiar with its use. Figure 4-1 provides a WESTON Management Chart which identifies decision makers during contingency implementation.

The Project Safety Officer (PSO), Mike Bradshaw and the Site Safety Officer (SSO), Richard Treat are responsible for identifying potential site hazards during fieldwork activities. These officers' main role is contingency prevention. The SSO holds health and safety briefings, identifies health and safety equipment needs, and is responsible for design of site control zones, monitoring site entry, and maintaining a site health and safety logbook. The SSO has the authority to shut down site activities if conditions warrant. The SSO works closely with RMA personnel and is responsible for communicating unsafe conditions to them and the WESTON Task Manager. The SSO or his designee is on site during all fieldwork.

Equipment operators and other on-site personnel are responsible for having a working knowledge of the contingency response plan. They are to take part in the health and safety meetings and are to communicate potentially hazardous site conditions. If on-site personnel encounter potentially hazardous

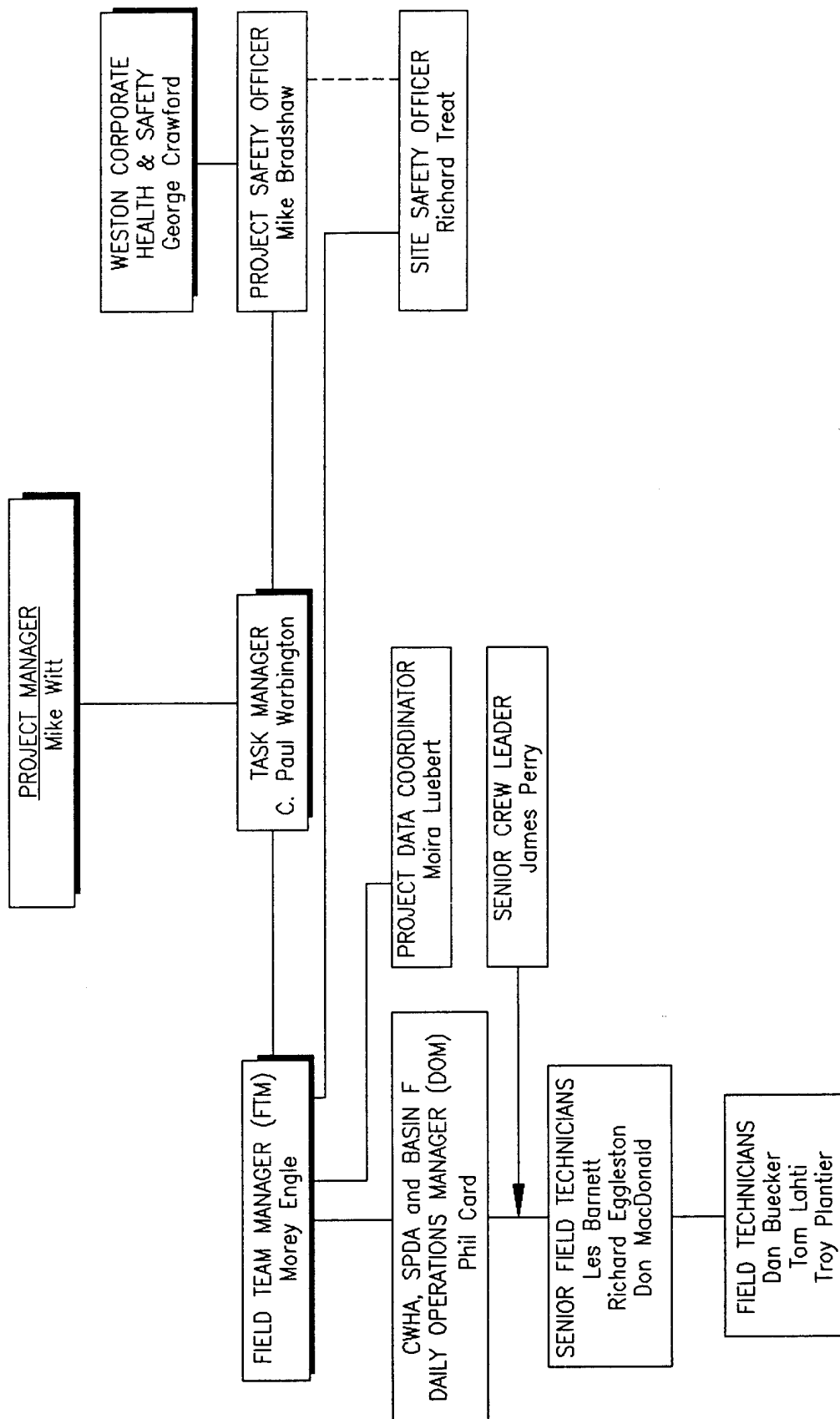


FIGURE 4-1
WESTON MANAGEMENT CHART

conditions they are to immediately notify the Field Team Manager (FTM), SSO, or the Daily Operations Manager (DOM).

4.2 INCIDENT PHASE

An incident is an event which presents an identifiable risk to human health or the environment. Listed below are four main procedures to follow. These include: notification, identification of a hazardous waste, assessment, and control procedures for site specific units.

4.2.1 Notification [40 CFR 264.56(a)]

The first person to detect an event or incident, usually WESTON field personnel, shall notify via radio or telephone one of the following:

- Field Team Manager (FTM)
- Daily Operations Manager (DOM), for appropriate area
- Site Safety Officer (SSO)

The FTM or his alternate must make a determination on whether to implement the Contingency Plan (see Section 3.0 for details). The FTM, WESTON EC, will activate the Contingency Plan and initiate requests for assistance from the RMA Fire Protection and Prevention Branch and RMA Ambulance, as needed. After receiving the initial incident notification from field personnel, the WESTON EC will assume responsibility for any further notifications. These notifications include:

- RMA Fire Protection and Prevention Branch
- RMA Security
- PMRMA
- WESTON Task Manager

Figure 4-2 depicts the sequence in which the WESTON EC, all facility personnel, and RMA are to be contacted. Notifications will be directed by the WESTON EC.

4.2.2 Identification and Compatibility of Hazardous Wastes [40 CFR 264.56(b)] and [40 CFR 264.56(g)(1)]

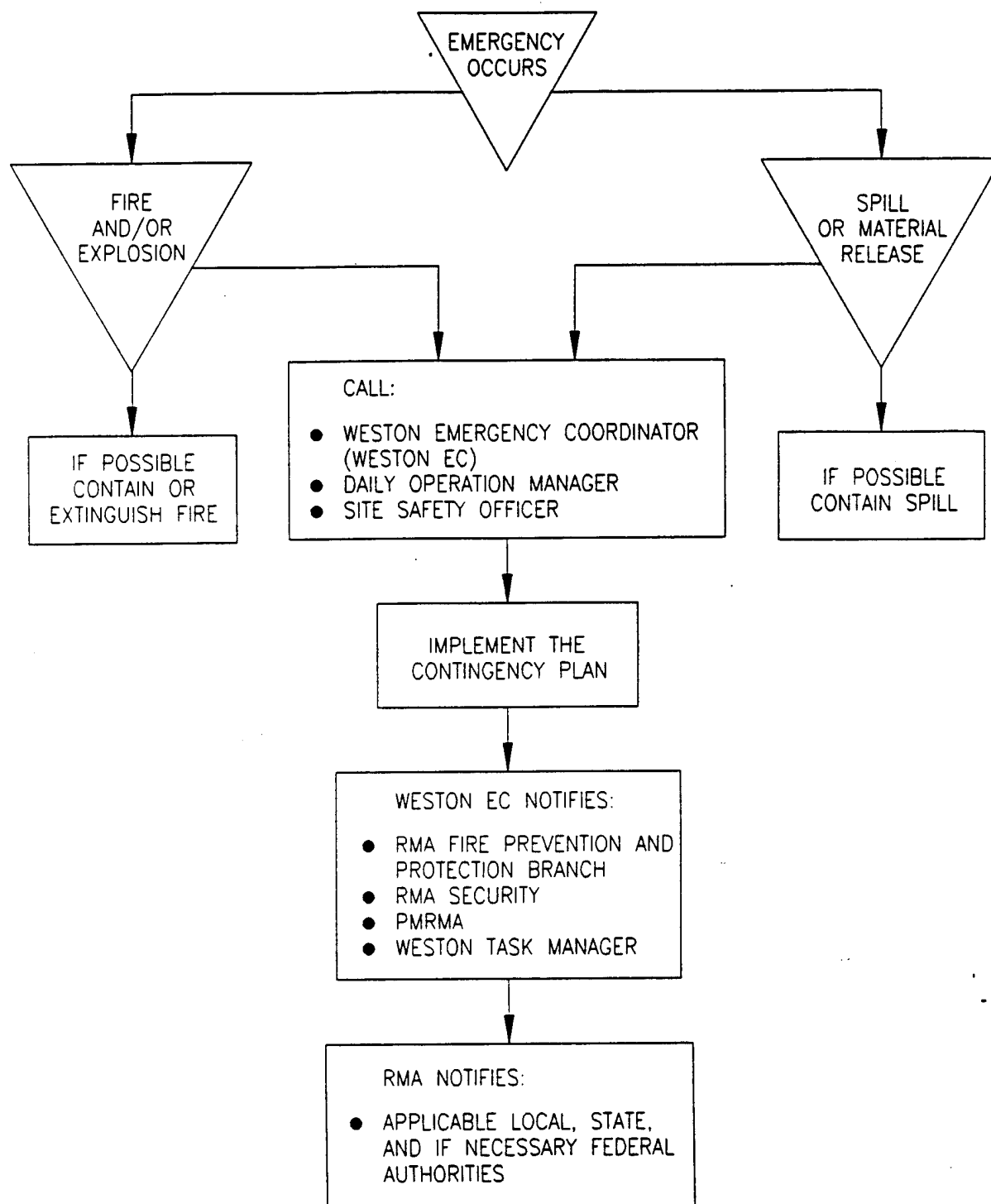
The WESTON EC will immediately identify the character, exact source, amount, and areal extent of the release. The initial identification method will be to utilize visual inspection of the material and location of the release.

The types of wastes generated at RMA include Basin F wastes, waste water from well purging or decontamination, and various RI/FS wastes such as soils, PPE, laboratory wastes, and trash. For these wastes to become subject to RCRA requirements, the wastes must be listed or characteristic of RCRA hazardous wastes. Based upon information and guidance from RMA, these wastes have been determined not to contain any listed hazardous wastes. Therefore, these wastes may be considered characteristic hazardous wastes by ignitable, corrosive, reactive or toxicity characteristics.

Based upon historical analytical results from the RI/FS samplings and analysis program, two classes of chemicals that could potentially produce ignitable or reactive wastes were identified. The first class of chemicals that could be dangerous because of their reactive nature are those chemicals associated with lab operations and byproducts from certain reactions. These include such chemicals as white phosphorus, sodium, and potassium. White phosphorus has been found in field investigations of Section 36; however, when it was found and exposed to air it immediately caught on fire.

The records indicate that no attempt was made to move this contaminated material into storage. The sodium and potassium, pyrophoric compounds, were also used in lab operations. These metals have not been found in any environmental samples except as inert cations.

FIGURE 4-2
CONTINGENCY PLAN DECISION DIAGRAM



The second class of chemicals involved compounds containing cyanide or sulfide groups. The main sulfide compounds found at RMA are dimethyldisulfide, an offgassing byproduct; p-chlorophenyl methyl sulfide, used by SHELL; and mustard agent, bis(2-chloroethyl)sulfide. The highest concentration of dimethyldisulfide found at RMA is 100 ug/g which does not present a reactive problem. Research indicates that hydrogen sulfide, a gas, was generated during pesticide production but, because of its volatility, it will not be present to any extent in the RMA wastes. The p-chlorophenyl methyl sulfide is found in ppm quantities in certain sections of RMA but is not very stable in that it reacts with oxygen to form the corresponding sulfoxide and sulfone. The low concentrations at which this compound may be found in the waste precludes a reactivity problem. The last of the sulfide containing compounds is the chemical agent mustard. All areas sampled in which mustard was present were screened with the M-8 and M18A1 field agent kits. Any sample found to contain even trace quantities of mustard were not placed in the hazardous waste inventory. The danger presented by mustard is a chemical burn rather than a reactivity problem.

Cyanide and cyanogen chloride were both used at RMA. Of these species, only the cyanide as the anion has been found in low concentrations in the Basin F and sewer samples. In this form and because of the alkaline nature of the waste at RMA, which prevents the formation of hydrogen cyanide, this does not appear to present any danger.

As a result of this evaluation, it is felt that the wastes currently stored in the CWA do not exhibit the characteristics of ignitability, or reactivity. In general, the only concern with corrosivity will be the pH value for wastes containing liquids with the exception of Basin F wastes, which contain high concentrations of inorganic salts able to corrode steel.

No historic information is currently available on EP toxicity or on the Toxicity Characteristic Leaching Procedure (TCLP), therefore, the wastes generated at RMA may exhibit a toxic characteristic. Additional information on the type of constituents found at RMA are presented in Table 4-1 and 4-2 by section number. Table 4-3 provides the chemical characterization of Basin F fluid.

TABLE 4-1
Constituents Found in Soils at Rocky Mountain Arsenal

ANALYTE	SECTION																																	
	1	2	3	4	5	6	7	8	9	10	11	12	19	20	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36					
CU	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CR	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
PB	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
AS	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CD	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
IRG	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ZN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
DLDAN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ALDRIN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
TCER	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ENDRN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
PFDD	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CHCL2	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CLDAN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CH4	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
HTTUE	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
KYLEN	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
PFDDT	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
TRCLE	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ISODR	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
MECHS	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
DIMP	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CTMSO2	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CIACP	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
OXAT	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
INTH	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
DBCP	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
DXPD	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
TDGCL	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CHCL3	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
MIBK	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CDXCL2	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ECZA	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CI.CZA	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
13DMB	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CCLA	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
BCIPI	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CPMS	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
ETOHIS	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
PFDDO	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
DMDS	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
AG	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
F	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CPMSO	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					
CRHEX	X		X	X	X	X	X	X	X		X	X		X		X	X			X	X	X	X	X	X	X	X	X	X					

TABLE 4-1 (Continued)

ANALYTE	SECTION																																	
	1	2	3	4	5	6	7	8	9	10	11	12	19	20	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36					
SUFONA	X	X																																
CALIMW											X	X																						
MPA																																		
112DCE				X																														
DMMP	X										X	X																						
BZEIP																																		
CLO4H5	X																																	
IMPA																																		
12DCE				X																														
TCLEA																																		
DNBP											X	X																						
ATZ	X																																	
12DCE																																		
ALHMW												X																						
BTZ																																		
SE											X																							
TMP	X																																	
MLTHN	X																																	
H																																		
PRTHN	X																																	
L																																		
S04																																		
11DCE																																		
DNOPD4																																		
UITS	41	6	14	24	6	10	4	3	3	0	14	23	0	6	3	13	20	2	11	6	3	7	17	15	10	4	14	23	40					

TABLE 4-2
CHEMICAL ABBREVIATIONS

<u>ABBREVIATION</u>	<u>DEFINITION</u>
111 TCE	1,1,1- Trichloroethane
112 TCE	1,1,2- Trichloroethane
11 DCE	1,1- Dichloroethene
12 DCE	1,2- Dichloroethene
12 DCLE	1,2- Dichloroethane
13 DMB	1,3- Dimethylbenzene
AG	Silver
ALDRIN	Aldrin
ALHMW	Alcohols (High Molecular Weight)
AS	Arsenic
ATZ	Atrazine
B2EHP	Bis (2-Ethylhexyl) Phthalate
BCHPD	Bicyclo (2,2,1) Hepta-2, 5Diene
BTZ	Benzothiazole
C6H6	Benzene
CALLMW	Hydrocarbons (all Molecular Weights)
CCL4	Carbon Tetrachloride
CD	Cadmium
CD2CL2	Methylene Chloride - D ₂
CH2CL2	Methylene Chloride
CHCL3	Chloroform
CL6CP	Hexachlorocyclopentadiene (HCCPD)
CLC2A	Chloro Acetic Acid
CLC6H5	Chlorobenzene
CLDAN	Chlordane
CPMS	P-Chlorophenylmethyl Sulfide
CPMSO	P-Chlorophenylmethyl Sulfoxide
CPMSO2	P-ChlorophenylmethylSulfone
CR	Chromium

TABLE 4-2
CHEMICAL ABBREVIATIONS (Continued)

<u>ABBREVIATION</u>	<u>DEFINITION</u>
CRHEX	Hexavalent Chromium
CO	Copper
DBCP	Nemagon
DCPD	Dicyclopentadiene
DIMP	Di-isopropylmethylphosphonate
DITH	Dithiane
DLDRN	Dieldrin
DMDS	Dimethyldisulfide
DMMP	Dimethyl Methylphosphate
DNBP	Di-n-Butyl Phthalate
DNOPD4	Di-n-Octyl-Phthalate-D ₄
ENDRN	Endrin
ETC6H5	Ethylbenzene
F	Fluoride
FC2A	Fluoroacetic Acid
H	Mustard
HG	Mercury
IMPA	Isopropylmethyl Phosphonic Acid
ISODR	Isodrin
L	Lewisite
MEC6H5	Toluene
MIBK	Methyl Isobutyl Ketone
MLTHN	Malathion
MPA	Methylphosphonic Acid
OXAT	1,4- Oxathiane
PB	Lead
PPDDD	2,2-Bis (Para-chlorophenyl) -1,1-Dichloroethane
PPDDE	Dichloro Diphenyl Dichloroethane
PPDDT	2,2-Bis (Para-chlorophenyl) -1,1-Dichloroethene
PRTHN	Parathion
SE	Selenium

TABLE 4-2
CHEMICAL ABBREVIATIONS (Continued)

<u>ABBREVIATION</u>	<u>DEFINITION</u>
SO4	Sulfate
SUPONA	Supona
TCLEA	1,1,2,2- Tetrachloroethane
TCLEE	Tetrachloroethylene
TDGCL	Thiodiglycol
TMP	Trimethyl Phosphite
TRCLE	Trichloroethylene
XYLEN	Xylenes
ZN	Zinc

TABLE 4-3
CHEMICAL CHARACTERIZATION OF BASIN F LIQUIDS

Compound/ Parameter	Unit	Historical (1978)	Concentration/Range					VES (1986)	WCC (1988)	
			RMA (1980)	EBASCO (1986)	Shell (1986)	(Unfilt.)	(Filt.)			
pH	---	6.9 - 7.2	*	6.02	6.0	5.7	6.1 - 6.3**	5.8**		
Aldrin	ppb	50.0 - 400	23.8	2,300	420	na	2,500 - 2,900	1,100		
Isodrin	ppb	2.0 - 15	7.57	1,980	90	na	nd	nd		
Dieldrin	ppb	5.0 - 110	7.15	459	300	na	nd	nd		
Endrin	ppb	5.0 - 40	1.98	596	180	na	nd	nd		
Dithiane	ppb	30.0 - 100	5.0	---	*	na	+	+		
ppODE	ppb	*	*	109	*	na	nd	nd		
ppDDT	ppb	*	*	340	*	na	nd	nd		
CPMSO	ppb	4,000 - 10,000	25,800	1,000	20,000	na	+	+		
CPMSO ₂	ppb	25,000 - 60,000	80,800	1,000	200,000	na	+	+		
Hexachloro- cyclopentadiene	ppb	*	*	1,850	*	na	nd	nd		
Atrazine	ppb	*	*	220	*	na	nd	nd		
Malathion	ppb	*	*	810	*	na	nd	nd		
Parathion	ppb	*	*	110	*	na	nd	nd		
Supona	ppb	*	*	340	*	na	nd	nd		
Vapona	ppb	*	*	890	*	na	nd	nd		
Benzene	ppb	*	*	7.7	*	na	nd	nd		
Bromomethane	ppb	*	*	*	*	*	nd - 18	na		
Chloroform	ppb	*	*	*	*	*	1.9 - 3.1	na		
Toluene	ppb	*	*	*	*	*	8.3 - 9.8	na		
4-Nitrophenol	ppb	*	*	*	*	*	8,600 - 18,000	7,400		
DIMP	ppm	10.0 - 20	123	0.4	<0.1	na	nd	nd		
DIMP	ppm	500 - 2,000	556	na	760	40,700	48,900 - 60,900	53,000		
Ammonia	ppm	*	*	na	na	na	na	na		
Urea	ppm	*	*	na	na	na	na	na		
Dimethyldisulfide	ppm	*	*	na	80 - 120	na	+	na		
Calcium	ppm	*	*	6.8	270	na	170 - 190	180		
Potassium	ppm	*	*	30	1,100	na	1,000 - 2,900	1,000 - 2,700		
Sodium	ppm	48,000 - 56,000	65,000	2,300	49,000 - 61,000	na	60,000	54,000		
Chloride	ppm	110 - 117	110,000	120,000	159,000	na	120,000 - 130,000	130,000		
Fluoride	ppm	*	170	21	55	na	***	***		
Sulfate	ppm	21,000 - 25,000	*	na	47,000	na	25,000 - 27,000	27,000		

TABLE 4-3 (cont.)
CHEMICAL CHARACTERIZATION OF BASIN F LIQUIDS

Compound/ Parameter	Unit	Historical (1978)	RMA (1980)	EBASCO (1986)	Shell (1986)	VES (1986)	Concentration/Range	
							(Unfilt.)	MCC (1988) (Filt.)
Nitrate	ppm	*	*	*	*	*	1,300	1,300
Nitrogen	ppm	120 - 145	*	na	*	na	103,700 - 104,400	101,300
Phosphorus (total)	ppm	2,050 - 2,150	*	na	16,200	na	8,600 - 9,140	8,400
Hardness	ppm	2,100 - 2,800	*	na	*	na	na	na
Alkalinity	ppm	*	*	*	*	*	1,500 - 1,600	2,000
Aluminum	ppm	*	*	*	*	*	5.0 - 5.5	3.1
Antimony	ppm	*	*	*	*	*	.6 - 1.1	0.6
Arsenic	ppm	1.0 - 1.3	2.1	3.0	8	3.1	3.0 - 3.9	3.8
Barium	ppm	*	*	*	*	*	0.4	0.4
Boron	ppm	*	*	*	*	*	19	21
Cadmium	ppb	*	*	8.4	<2,000	na	30 - 50	40
Chromium	ppb	*	*	85	1,000	na	1,500 - 1,800	1,900
Cobalt	ppm	*	*	*	*	*	.82 - .93	.93
Copper	ppm	700 - 750	*	210	5,200	5,860	3,900 - 4,000	4,200
Iron	ppm	5.0 - 6.0	*	na	75	na	59 - 62	58
Lead	ppb	35 - 40	*	74	<2,000	na	nd	nd
Magnesium	ppm	*	*	5.6	220	na	230 - 250	250
Manganese	ppm	26 - 29	*	*	*	*	6.8 - 7.2	7.1
Mercury	ppb	*	*	140	200	na	340	340
Molybdenum	ppm	*	*	*	*	*	2.4 - 2.5	2.6
Nickel	ppm	*	*	*	*	*	31 - 34	33
Vanadium	ppm	*	*	*	*	*	2.5 - 3.0	2.6
Zinc	ppm	1.45 - 1.55	*	.95	22	na	23	23
Cyanide	ppm	24,500 - 26,000	*	na	*	na	.68 - 1.2	.68
COD	ppm	20,500 - 22,500	*	na	158,000	na	220,000 - 230,000	210,000
TOC	ppm	*	29,600	na	72,000	97,000	18,000 - 23,000(S)	22,000(S)
Total Organic Halide (TOX)	ppb	*	*	*	*	*	380,000 - 570,000	340,000
TSS	ppm	*	*	*	*	*	1,500 - 1,600++	1,100++
Specific Gravity	---	*	*	*	*	*	1.24	1.24
Conductivity	pmhos/cm	*	*	*	*	*	110,000	110,000
Viscosity 2°C	cp	*	*	*	*	*	4.6 - 4.7	5.0
Viscosity 10°C	cp	*	*	*	*	*	3.4	3.8

TABLE 4-3 (cont.)
CHEMICAL CHARACTERIZATION OF BASIN F LIQUIDS

Compound/ Parameter	Unit	Historical (1978)	Concentration/Range				MCC (1988)	
			RMA (1980)	EBASCO (1986)	Shell (1986)	WES (1986)	(Unfilt.)	(Filt.)
Viscosity 15°C	cp						2.9	3.1
Viscosity 20°C	cp						2.5	2.6
Viscosity 25°C	cp						2.1	2.3

* Exact analytical procedures unclear, assumed to be "not analyzed for"
 ** pH for this type of solution must be interpreted with care. Measured 36 days after sample collection
 *** Not quantifiable due to matrix interference
 + Tentatively identified compound, see chemical analysis tables
 ++ TSS measured 8 days after sample collection
 na Not analyzed for
 nd Not detected
 S Suspect Due to COD:TOC ratio and past results

The EC will determine how wastes, which may be incompatible with the released material, are handled, stored, or containerized with appropriate controls to prevent mixing. The EC will also ensure that, in affected areas of the facility, no wastes that are incompatible with the released waste is treated, stored, or disposed of until cleanup procedures are completed.

4.2.3 Wind Rose

The wind rose shown in Figure 4-3 indicates that the predominant wind direction for the Commerce City area is from the south and south-southwest. An initial site wind direction assessment will be made using each areas wind sock as an indicator. Because of variable local winds, however, the most accurate assessment of short-term and extended meteorological conditions will be accomplished by calling the National Weather Service at the Stapleton Airport (303-398-3964).

4.2.4 Assessment [40 CFR 264.56(c) and (d)]

The EC will assess possible hazards, both direct and indirect, to human health or the environment after implementing the Contingency Plan. This assessment will be based on the following:

- The character of the released material(s).
- The exact source of the released material(s).
- The amount of the released material(s).
- A determination of the areal extent of the release material(s).
- An assessment of the possible hazards to human health and the environment.

The potential information used in making assessments will be drawn from:

- Emergency coordinate observations.
- Reports from WESTON field personnel.

Rocky Mountain Arsenal
(October 1, 1988-September 30, 1989)

Stapleton Airport
(1982-86 Annual)

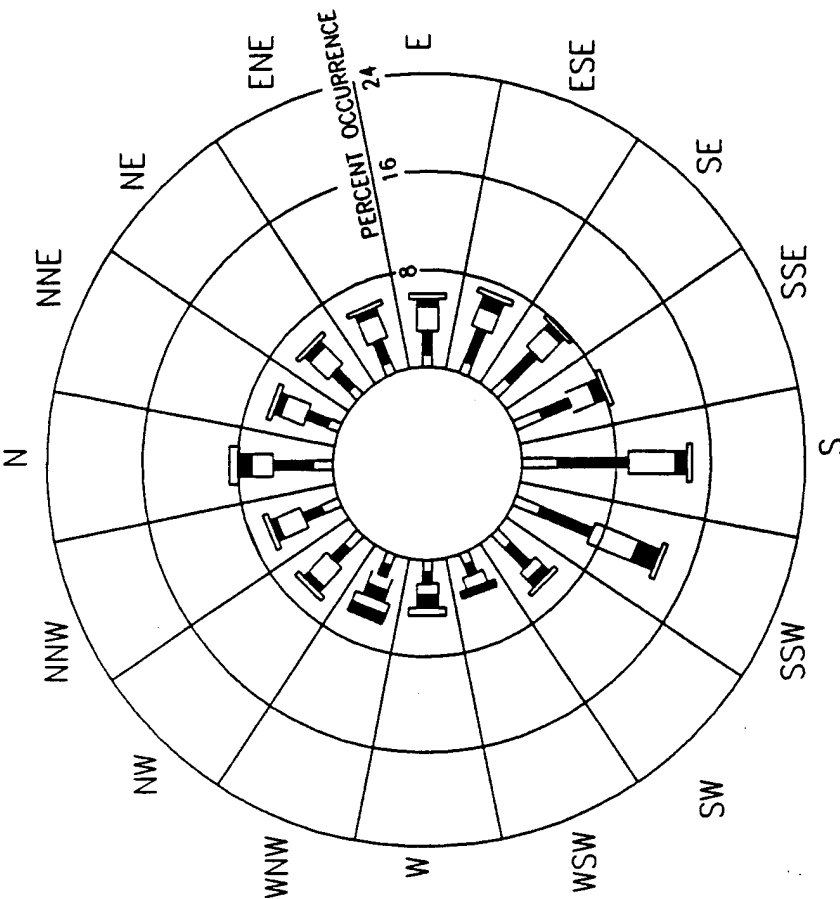
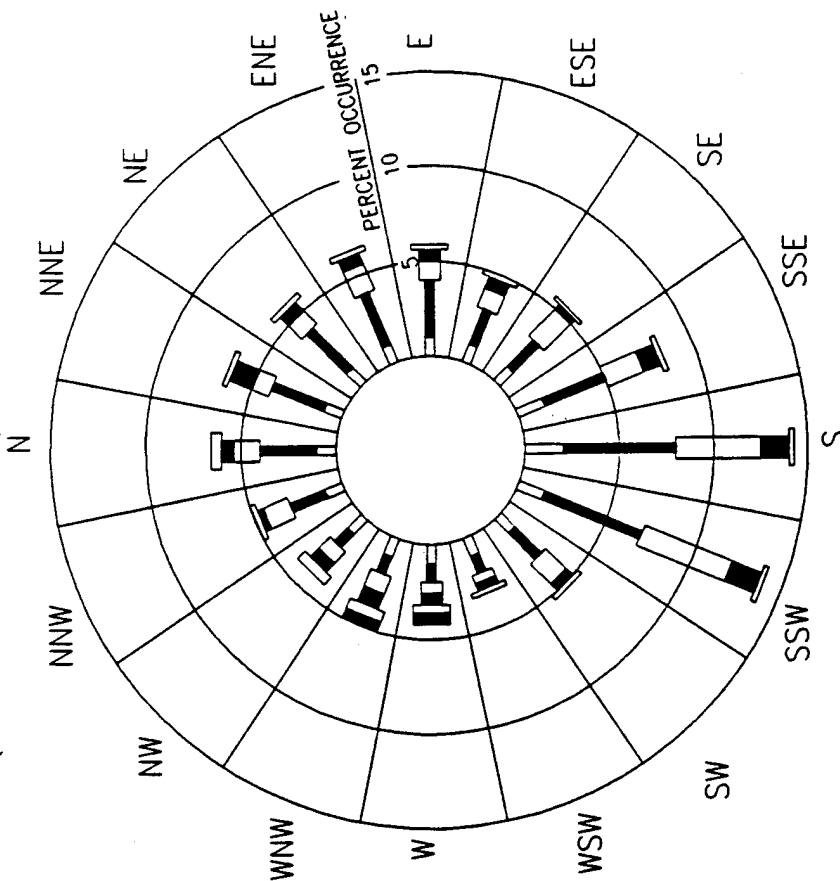


FIGURE 4-3

WIND ROSES FOR ROCKY MOUNTAIN ARSENAL AND STAPLETON AIRPORT

- Operating records.
- Weekly inspection forms.
- Warehouse inventory database.
- Chain-of-custody records.
- Miscellaneous sources of information and response assistance.

4.2.5 Control Procedures [40 CFR 264.52(a)]

Potential accidents fall under two general classifications: fire and/or explosions, and spills or material releases. Floods are not considered as a serious potential threat to the RMA facility. An overview of the emergency plan of action, that will be followed as outlined in Figure 4-2.

4.2.5.1 Fire and/or Explosion

All areas of loading, off-loading, storage, and decontamination can be easily accessed by fire-fighting and other emergency vehicles and equipment. The gravel-surfaced roads leading to the CWA, SPDA, and the Basin F units are kept clear of obstructions.

The RMA Fire Protection and Prevention Branch (FPPB) will be on standby during general facility emergencies. If a fire should break out, efforts will be placed on preventing the fire from spreading to nearby areas. RMA will take the lead in all situations regarding fire and/or explosion and in situations involving personnel injuries. The fire-fighting effort will be carried out by the RMA FPPB. If the RMA FPPB cannot handle a fire situation, outside assistance will be called in by RMA. Table 4-4 outlines the RMA FPPB and their phone number.

TABLE 4-4

**RCRA CONTINGENCY PLAN
RMA Fire Protection and Prevention Branch
(Phone #: 289-0223)**

Fire Chief

M. L. Wittig

Assistant Chiefs

R. A. Teter
C. L. Wilhelm

Captains

R. A. Hlavaty (TNG)
C. C. Smith

Firefighters

R. G. Fierro
P. J. Higdon
R. S. Johnson
J. C. Lee
W. P. McLaughlin
M. L. Monaco
L. W. Musslewhite
T. D. Reed
M. E. Yadon

The following actions will be taken in the areas affected by fire or explosion:

- Hazardous work in all WESTON areas will be shut down.
- Operating equipment will be shut down safely, as necessary and practical.
- The EC will be contacted.
- The area will be cleared of all personnel not actively involved in fighting the fire.
- All injured persons will be removed, and medical treatment will be administered by trained personnel.

Because fire is always a potential hazard in flammable materials spills, possible sources of ignition will be eliminated while the incident is on-going. Vehicular traffic and work with hazardous waste will cease in the area until the spill is contained and safety restored. If spilled materials are flammable, the RMA FPPB will respond with on-site fire fighting equipment. Flushing with large quantities of water or foaming of the spill will be performed if advised by the fire department chief. Materials will be contained and collected for proper treatment and disposal.

4.2.5.2 Spills or Material Releases

In the event of a major emergency involving a chemical spill, WESTON will maintain the lead during such an occurrence, and the following general procedures will be used for rapid and safe response to control the situation. Emergency contacts found in Tables 2-1, 2-2, 2-3, and 2-4 provide a quick reference guide in the event of a major spill. WESTON maintains an active working relationship with West HazMat, which can provide large equipment and personnel to clean up major spills.

If a WESTON field person discovers a chemical spill or an incident resulting in a vapor release, the EC and/or the DOM will immediately be contacted. The designated EC will obtain the following information:

- The material spilled or released, as determined by color, presence of spilled material, monitoring and/or sampling.

- Location of the release or spillage of hazardous material.
- An estimate of quantity released and the rate at which it is being released.
- The direction in which the spill or vapor or smoke release is heading.
- Any injuries involved.
- Fire and/or explosion, or possibility of these events.
- The area and materials involved, and the intensity of the fire or explosion.

This information will help the WESTON EC to assess the magnitude and potential seriousness of the spill or release. If the accident is determined to lie within the WESTON emergency response capabilities, the EC will contact and dispatch the necessary company personnel. If the accident is beyond company capabilities, the EC will contact the RMA FPPB.

The initial response to any emergency will be to protect human health and safety on and off post, and the environment. Identification, containment, treatment, and disposal assessment will be the secondary response. Table 4-5 identifies response activity priority, and Section 7 provides the evacuation plans for each area of operation.

In the event of a leak or spill, WESTON employees will be summoned to contain the spill; remove any standing liquids, contaminated soil, and debris; and complete the proper storage of the spilled material.

If for some reasons a chemical spill is not contained within a dike or sump area, an area of isolation will be established around the spill. If a major spill occurs at Basin F one back-up unit exists for containment of the waste. This includes the extra capacity in Pond A. The size of the area will generally depend on the size of the spill and the nature of the material involved. Any spills from the storage tanks will be contained within the dikes and can then be pumped from the containment area.

TABLE 4-5

RESPONSE ACTIVITY PRIORITY

1. Human Health and Safety^{..}
 - a. Evacuate area
 - b. First Aid
 - c. Monitor before re-entry

2. Environment
 - a. Identification
 - b. Containment
 - c. Clean-up for appropriate treatment/storage/disposal

When any spill occurs, only those persons involved in emergency operations will be allowed within the designated hazard area. If possible, the area will be roped or otherwise blocked off.

The following guidelines will be used in case of an accidental episode involving waste materials. These are general guidelines, and circumstances may dictate some alternation to these procedures.

Most waste spills and leaks will be contained within the dikes and sumps provided in the tank area or within the container storage area. Small spills occurring in a diked area will be retrieved with vacuum pumps and absorbents. If necessary, the wastes may be placed in 55-gallon polyethylene drums to be stored properly in the CWAH.

For all major spills or serious leaks the following guidelines will be followed as closely as possible:

- If a leak develops or a spill occurs, the person discovering the discharge will leave the immediate area and contact the EC, the DOM, or the SSO. The EC will obtain the following information:
 - Person(s) injured and seriousness of injury.
 - Location of the spill or leak, and source (tank, storage area, landfill area, etc.)
 - Type of material that has spilled or is leaking.
 - The approximate amount of material spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving.
 - Whether or not a fire is involved.
- Next, the EC will:
 - Initiate the Contingency Plan and evacuate the hazard area.
 - Initiate Air Monitoring program for Health and Safety protection.
 - Call RMA Fire Protection and Prevention Branch.
 - Call RMA Security.
 - Call PMRMA.
 - Call WESTON Task Manager.

- Dispatch emergency field personnel to the site to take appropriate action.
- WESTON field response team will:
 - Make sure all unnecessary persons are removed from the hazard area.
 - Put on protective clothing and equipment.
 - If a flammable waste is involved, remove ignition sources, and use spark and explosion-proof equipment and clothing in containment and cleanup.
 - If possible, try to stop the leak. Special materials will be kept on hand for temporary repairs.
 - Remove surrounding materials that could be especially reactive with materials in the waste. Determine the major components in the waste at the time of the spill.
 - Use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, and clean up a spill if it has not been contained by a dike or sump. Most spills contained within the dike or sump can be pumped back into the appropriate storage tank or drum.
 - Collect all containment and cleanup materials in 55-gallon polyethylene drums and store appropriately in the CWA.
 - If material spills onto unprotected ground it will be cleaned up using absorbent materials and by excavating contaminated soils if necessary.
 - Collect samples for chemical analyses to ensure the area is properly cleaned.

4.3 POST-INCIDENT PHASE

Once measures have been taken to control the emergency, the response procedure goes into the post-incident phase. During this phase, follow-up actions may be necessary to protect human health and the environment. During this post-incident phase, four possible activities to be conducted are identified below.

4.3.1 Recording Procedures

Briefings of any incident will be part of the weekly health and safety briefings conducted by WESTON for its site personnel, as well as part of the weekly presentation by WESTON to the PMRMA. Weston will provide RMA with a written report regarding an incident and any follow-up procedures that may be required.

The PMRMA will assume responsibility for notifying the appropriate federal or state authorities regarding the incident and inform them of when the facility will resume normal operations. The PMRMA will also submit a written report of the incident to the appropriate federal or state authorities, as required.

4.3.2 Field Investigation

A field investigation will be performed to identify the cause of the incident and to determine the damage caused by the incident. An evaluation report will be prepared to provide a problem definition, any recommended chemical analysis, and remedial actions recommendations.

4.3.3 Clean-up and/or Reconstruction/Modification

The spilled or leaked material will be managed by expeditious cleanup crews and will then either be stored in containers or placed in Basin F back-up units if Basin F wastes are involved. WESTON decontamination procedures will be implemented and appropriate repairs or modifications will be made. Emergency equipment maintained by WESTON, which was used for responding to the incident, will be cleaned and prepared for its intended use following the incident and prior to resumption of normal operations.

4.3.4 Resumption of Normal Operations

After response to the incident and all follow-up procedures have been completed, the unit will be recertified and returned to service.

SECTION 5

RESPONSIBILITIES OF INCIDENT RESPONSE PERSONNEL

The Incident Response Personnel (IRP) is organized to include the EC, the Field Incident Commander (FIC), the Incident Safety Officer (ISO), and the Response Teams (Figure 5-1). The responsibilities of the EC, FIC, ISO, and the individual members of the response teams are discussed in the following paragraphs.

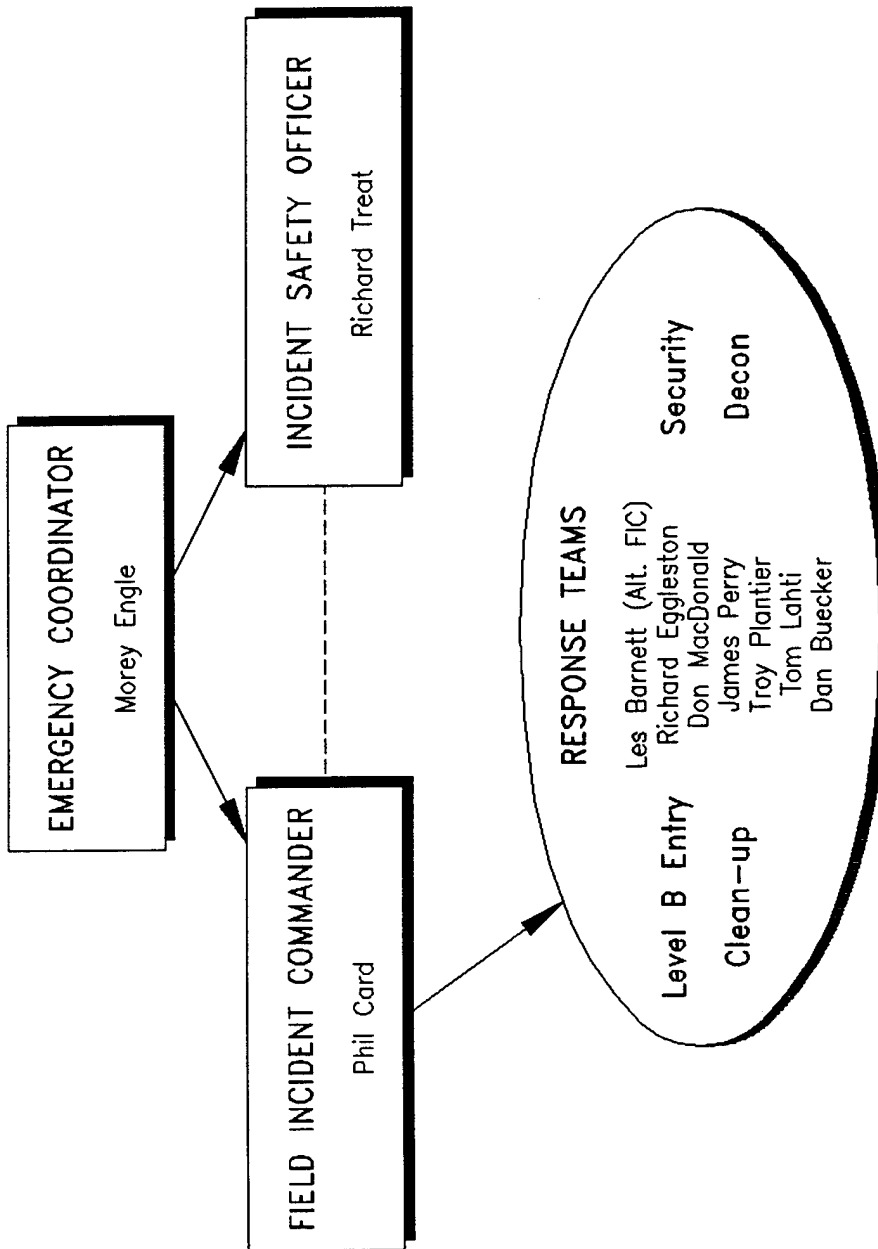
5.1 EMERGENCY COORDINATOR

According to RCRA, the EC must identify the character, exact source, amount, and areal extent of any released material, and assess the possible hazards to human health or the environment. The EC and his alternates are identified in Table 2-1 of Section 2. The Alternate EC is the individual who performs the duties of the EC in his absence. The responsibilities of the EC include and are not limited to the following:

- Deciding to implement the Contingency Plan.
- Notifying RMA FPPB, RMA Security, PMRMA, and WESTON Task Manager.
- Making other emergency response contacts.
- Serving as a point of contact between incident responders and all other involved parties.
- Filing incident reports with WESTON Task Manager.
- Preparing detailed incident documentation for file.

5.2 FIELD INCIDENT COMMANDER

The FIC is responsible for coordinating all field activities and relaying the appropriate information to the EC. The responsibilities of the FIC include and are not limited to the following:



215 Union Boulevard
Suite 550
Lakewood, CO 80228
(303) 980-6800

ROCKY MOUNTAIN ARSENAL
Commerce City
Colorado

CONTINGENCY PLAN
RESPONSE PERSONNEL ORGANIZATION

FIGURE
5-1

- Managing field operations.
- Briefing response personnel on their specific assignments.
- Noting wind speed and direction.
- Moving all apparatus controlled by the security team.
- Coordinating with the ISO the silt work zones, including the decon line, emergency booth, and the ambulatory line.

The FIC and his alternates are identified below. The alternate FIC is the individual who performs the duties of the FIC in his absence.

- Field Incident Commander

Phil Card
42907 Vista Ridge
Parker, CO 80134
(303) 841-0676

- First Alternate

Les Barnett
11733 St. Paul Street
Thornton, CO 80233
(303) 457-2902

- Second Alternate

Dick Treat
9215 Perry Street
Westminster, CO 80030
(303) 426-7385

5.3 INCIDENT SAFETY OFFICER

The ISO is responsible for the safety of all on-site personnel involved in the incident, determining the level of personal protective clothing and equipment, and also ensuring that all safety procedures are followed during the incident. Once an individual fills this role as the ISO during any incident, this individual cannot fill

any other position during that incident. The responsibilities of the ISO include and are not limited to the following:

- Selecting the level of protective clothing and equipment.
- Ensuring the safety of all response personnel.
- Monitoring on-site hazards and conditions.
- Monitoring response personnel for signs of stress.
- Enforcing the buddy system.
- Knowing emergency procedures, evacuation routes, and emergency telephone numbers.
- Coordinating emergency medical care.

The ISO and his alternates are identified below. The Alternate ISO is the individual who performs the duties of the ISO in his absence.

- Incident Safety Officer (ISO)

Dick Treat
9215 Perry St.
Westminster, CO 80030
(303) 426-7385

- First Alternate

Les Barnett
11733 St. Paul Street
Thornton, CO 80233
(303) 457-2902

- Second Alternate

Richard Eggleston
4354 Hoyt Street
Wheat Ridge, CO 80033
(303) 431-2670

5.4 RESPONSE TEAMS

The response personnel consist of four teams of individuals who are able to effect a timely and efficient response to incidents at RMA within WESTON's areas of operation. These teams consist of the Level B entry team, the security team, the decon team, and the clean-up team. The response personnel will consist of the following on-site individuals:

Les Barnett
Dan Buecker
Richard Eggleston
Tom Lahti
Don MacDonald
James Perry
Troy Plantier

Any of these individuals may be assigned to any of the four teams, depending on the incident and the number of individuals available to respond. The responsibilities of each team are discussed below.

Level B Entry Team

- Perform equipment check before entry.
- Review hand signals with team.
- Apply identifying numbers to coveralls and air monitoring gear.
- Team leader should take one slate and other personnel should take FID or PID, and CGI.
- Enter through decon corridor and recon site.
- Define hot zone with cones.
- Note any hazards and draw diagram on slate.
- Team leader should inform FIC of situation.
- Keep close watch on other team members.
- Monitor both breathing zone and head space.
- Take mitigation measures if possible.
- Record all pertinent data and return to decon line.

Security Team

- Enforce site control.
- Place barriers across all approaches to incident.
- Set up wind sacks.
- Inform incident commander of any wind shifts.
- Place DANGER signs.
- Maintain watch on apparatus and access control points to prevent unauthorized entry and exit.
- Provide additional support as required.
- Secure equipment when response is completed.

Decon Team

- Dress in level of protection one level below that of entry crew.
- Ensure that all required equipment is available.
- Transport and set up equipment as required.
- Lay out visqueen decontamination corridor.
- Set up first aid station.
- Set up emergency decon booth with emergency eyewash/shower.
- Set up decon line for ambulatory patient.
- Set up fluids replacement station.
- Set up heat stress monitoring station.
- Place a bucket at front of decon line for air monitoring equipment drop.
- Place equipment drop-off point for shovels, etc. at front of line opposite air monitoring drop-off.
- Place four buckets for decon line and set up decon solutions.
- Place PPE drums at end of the line.
- Place eyewash/shower units at end of decon line in safe zone.
- Control the decontamination of all equipment, personnel, and samples from the contaminated areas.
- Assist entry crews through decon line and instruct them on procedures.

- Place decon solutions in drums when the incident is complete.
- Secure area when incident is complete.

Clean-up Team

- Enter through decon line and conduct air monitoring.
- Inform the FIC of any equipment needed and air monitoring changes.
- Leave area at once if breathing zone exceeds action level, PPE is breached, or fire occurs.
- Monitor other team members.
- Clean up after area secured by Level B entry team.
- Collect samples of soil, if possible, from clean area.
- Secure drums.
- Return to decon line.

SECTION 6

EMERGENCY EQUIPMENT

RMA's emergency equipment consists of fire control equipment, spill response equipment, and decontamination equipment. Each unit described in this Contingency Plan will have spill response equipment available for emergency response. The emergency equipment available for use at RMA is identified below.

6.1 FIRE FIGHTING EQUIPMENT

RMA operates a fully staffed fire branch on site for emergency purposes (Table 4-4). The branch depends on the on-site water supply available from approximately 100 fire hydrants located throughout the facility. Two types of hydrants exist: some are directly connected to public water mains, 4-inch to 12-inch depending on location, and are capable of supplying a minimum of 1,000 gallons/minute; others are processed water lines using a lake as the water source and are capable of supplying approximately 1066 gallons/minute. The static water pressure for both types of hydrants is approximately 100 psi. A list of the fire hydrant locations is maintained by the RMA Fire Protection and Prevention Branch.

The majority of the fire fighting equipment is located at the on site fire department. This is listed in Table 6-1. Appendix B provides a detailed list of the vehicles used by the RMA FPPB.

Also available for fire control are portable fire extinguishers located at each hazardous waste unit. These fire extinguishers are types A, B, and C. Type A is capable of extinguishing fires involving ordinary combustible materials such as wood, cloth, paper, rubber, and many plastics. Type B is capable of extinguishing fires involving flammable liquids, soils, greases, tars, oil-based paints, lacquers, and flammable gases. Type C is capable of extinguishing fires involving energized electrical equipment. All extinguishers comply with National Fire Code Standards for portable fire extinguishers, and they are inspected after each use or at least monthly. Records of these inspections are kept on file at the CWHHA.

TABLE 6-1
TYPICAL FIRE FIGHTING EQUIPMENT

- Fully equipped HAZMAT trailer
- Pumper truck
- A fully equipped ambulance with trained Emergency Medical Technicians on staff 24 hours/day
- One fully equipped rescue vehicle/brush truck
- Two general purpose vehicles
- Self-contained breathing apparatus (SCBAs)
- Assortment of organic vapor and acid gas respirators
- Tyvek suits
- Gloves
- PVC hip boots
- Fully encapsulating suits including butyl, chlorinated polyethylene, and PVC suits

Note: All equipment is maintained at the RMA FPPB

6.2 SPILL CONTROL EQUIPMENT

Equipment for use in containing and cleaning up spilled hazardous wastes is stored at each area of operation at RMA. A list of equipment and materials stored and maintained at each area (Table 6-2) represents equipment and supplies that are typically available, however specific quantities, types, sizes, and brands may vary.

TABLE 6-2
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
Facility Communications	<u>CUHA</u>	2-way portable radios are stored at CUHA. Each field team carries a radio at all times.	Capable of providing communications between company employees.
Fire Extinguishing Equipment	- 619	Commercial telephones and intercom.	Capable of communicating with outside emergency responders, i.e., RMA Fire Department.
	- 785E	Six 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 785C	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 785W	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 786	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 787	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 788	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 791	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 792	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 793	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 794	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 796	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 797	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- 798	Four 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RNA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	<u>SPDA</u>	Two 10 lb. ABC dry chemical fire extinguisher.	Capable of extinguishing Class A, B, and C fires.
	<u>Basin F - Waste Pile</u>	Five 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- Pond A	One 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- Pond B	One 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
	- Tank Farm	One 10 lb. ABC dry chemical fire extinguishers.	Capable of extinguishing Class A, B, and C fires.
Spill Control Equipment	<u>CUHA</u>	Drum Handling Equipment - Forklift for drum overpacks ¹	Capable of lifting and moving drums of waste material.
	- 619	Two spill control kit Two first aid kits	Capable of absorbing spilled materials. Capable of providing materials for general first aid response in the event of injuries, or an acute, chemically-caused illness. Capable of providing emergency light from a non-sparking source. Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
	- 785E	Two spill control kits Two first aid kits	Capable of absorbing spilled materials. Capable of providing materials for general first aid response in the event of injuries, or an acute, chemically-caused illness. Capable of providing emergency light from a non-sparking source.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
	- 785C	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials for general first aid response in the event of injuries, or an acute, chemically-caused illness. Capable of providing emergency light from a non-sparking source.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.

TABLE 6-2 (Continued)

TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	- 785C, continued	One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 785W	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 786	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
	- 787	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liners and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	- 788	One spill control kit	Capable of absorbing spilled materials.
		One first aid kit	Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
	- 791	One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
		One spill control kit	Capable of absorbing spilled materials.
		One first aid kit	Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
	- 792	One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
		One spill control kit	Capable of absorbing spilled materials.
		One first aid kit	Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	- 793	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 794	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 796	One spill control kit One first aid kit	Capable of absorbing spilled materials. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For use in containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.
		One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 797	One spill control kit One first aid kit	Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness.
		Two explosion-proof flashlights	Capable of providing emergency light from a non-sparking source.
		One 85-gallon overpack drum with liner and vermiculite.	Capable of use for a variety of needs that may arise in an emergency. For containerizing spilled material.
		One broom	Capable of sweeping area or removing contaminated debris.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	- 797, continued	One spark-resistant shovel	Capable of cleaning or removing contaminated debris without causing an ignition source.
	- 798	One spill control kit One first aid kit Two explosion-proof flashlights One 85-gallon overpack drum with liner and vermiculite. One broom One spark-resistant shovel	Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, or an acute, chemically-caused illness. Capable of providing emergency light from a non-sparking source. Capable of use for a variety of needs that may arise in an emergency. For containerizing spilled material. Capable of sweeping area or removing contaminated debris. Capable of cleaning or removing contaminated debris without causing an ignition source.
	<u>Basin F</u> - Waste Pile	Four emergency eye wash/shower units. One spill control kit. One first aid kit. One spark-resistant shovel. One case powersorb 3"x4' minibooms Two 5"x12' sorbent booms One emergency eye wash shower unit. One spill control kit. One first aid kit. One spark-resistant shovel.	Capable of use as needed for decontamination or flushing contaminated personnel. Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, an acute, chemically-caused illness. Capable of cleaning or removing contaminated debris without causing an ignition source. Capable of absorbing spilled materials. Capable of use as needed for decontamination or flushing contaminated personnel. Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, an acute, chemically-caused illness. Capable of cleaning or removing contaminated debris without causing an ignition source.
	- Pond A	One spill control kit. One first aid kit.	Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, an acute, chemically-caused illness.
	- Pond B	One spill control kit. One first aid kit. One spark-resistant shovel.	Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, an acute, chemically-caused illness. Capable of cleaning or removing contaminated debris without causing an ignition source.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	- Tank Farm	*One emergency eye wash/shower unit. One spill control kit. One first aid kit. One spark-resistant shovel.	Capable of use as needed for decontamination or flushing contaminated personnel. Capable of absorbing spilled material. Capable of providing materials or general first aid response in the event of injuries, an acute, chemically-caused illness. Capable of cleaning or removing contaminated debris without causing an ignition source.
Safety and Test Equipment ¹	CWHA	OVM OVA pH meter Oxygen-combustibles meter (CGL) TLV (Sniffer meter)	Capable of use in making initial determination of the nature and extent of unplanned chemical releases.
Personal Protective Equipment	CWHA	<u>Level B Equipment</u> SCBAs Tyvek Boots and booties Gloves Surgical gloves Hard hat	Capable of protecting WESTON personnel from exposure to hazardous wastes or hazardous waste constituents. Selection of appropriate equipment is based on the hazard being faced.
	CWHA	<u>Level C Equipment</u> Full face canister mask Canisters Tyvek Boots and booties Gloves Surgical gloves Hard hat	Capable of protecting WESTON personnel from exposure to hazardous wastes or hazardous waste constituents. Selection of appropriate equipment is based on the hazard being faced.
	CWHA	<u>Level D Equipment</u> Uniform (long-sleeved) Safety glasses or goggles Boots Hard hat Gloves	General field work with non-hazardous materials.

TABLE 6-2 (Continued)
TYPICAL EXAMPLES OF RMA EMERGENCY EQUIPMENT

Emergency Category	Equipment Location	Equipment Description	Equipment Capability
	<u>Basin F</u>	<p><u>Level C Equipment</u> Full face canister mask Canisters (cartridges) Tyvek Boots and booties Gloves Surgical gloves Hard hat (when appropriate)</p> <p><u>Level D Equipment</u> Uniform (long-sleeved) Safety glasses or goggles Boots Hard hat (when appropriate) Gloves</p>	<p>Capable of protecting WESTON personnel from exposure to hazardous wastes or hazardous waste constituents. Selection of appropriate equipment is based on the hazard being faced.</p> <p>General field work with non-hazardous materials.</p>

Availability will vary depending on use of equipment on projects and other tasks.

SECTION 7

EVACUATION PLANS

The evacuation of a particular area or building at RMA will be determined on a case-by-case basis by the EC or the ISO. Depending upon the area and the prevailing wind direction, all persons not participating in responding to the emergency shall evacuate by proceeding to the nearest area designated on each building or area diagram (Figures 7-1 through 7-15). All persons shall remain at these locations until the "ALL CLEAR" has been communicated by or advised by the ISO to leave the area.

While at the evacuation sites, all persons shall stand clear of the movement of emergency response personnel and equipment.

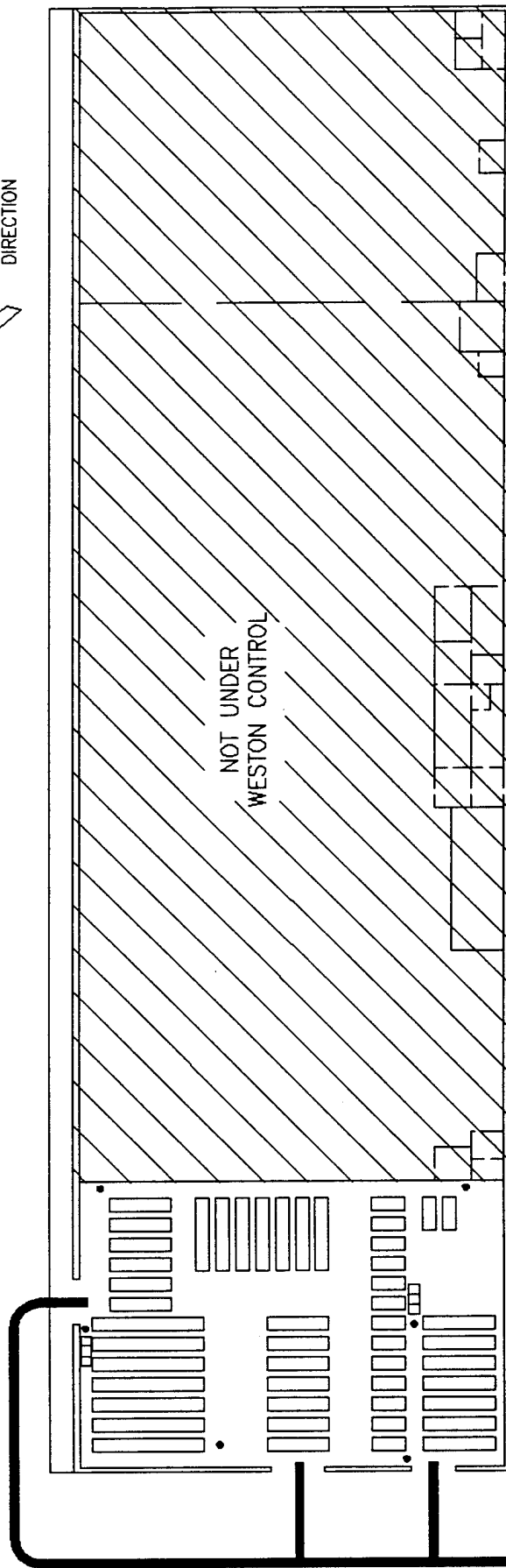
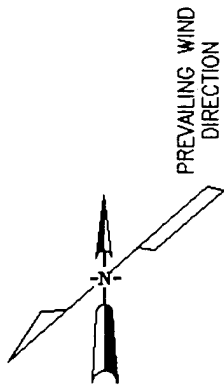
In the event that an installation-wide evacuation is necessary, the RMA Safety Coordinator shall authorize the sounding of the evacuation signal. The signal is a siren or horn wailing up and down scale with a duration of approximately 3 minutes. Immediately upon the sounding of the signal, all persons not participating in responding to the emergency shall evacuate RMA by proceeding to the nearest of the following locations:

- The parking lot at the West Gate.
- The vicinity of the Guard House at the South Gate.
- The parking lot at the North Boundary Groundwater Treatment Facility.

Other RMA emergency warning signals are listed in Table 7-1.

CONTENTS:

GENERAL NON-COMBUSTIBLE LIQUID
FLAMMABLE, COMBUSTIBLE, OXIDIZER,
POISON, HIGH PH, LOW PH, DRY
NON-COMBUSTIBLE



LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT,
FIRST-AID KIT,
& FLASHLIGHT

* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

ASSEMBLY AREA *

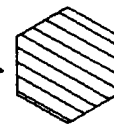


FIGURE 7-1

BUILDING 619 EVACUATION PLAN
NOT TO SCALE

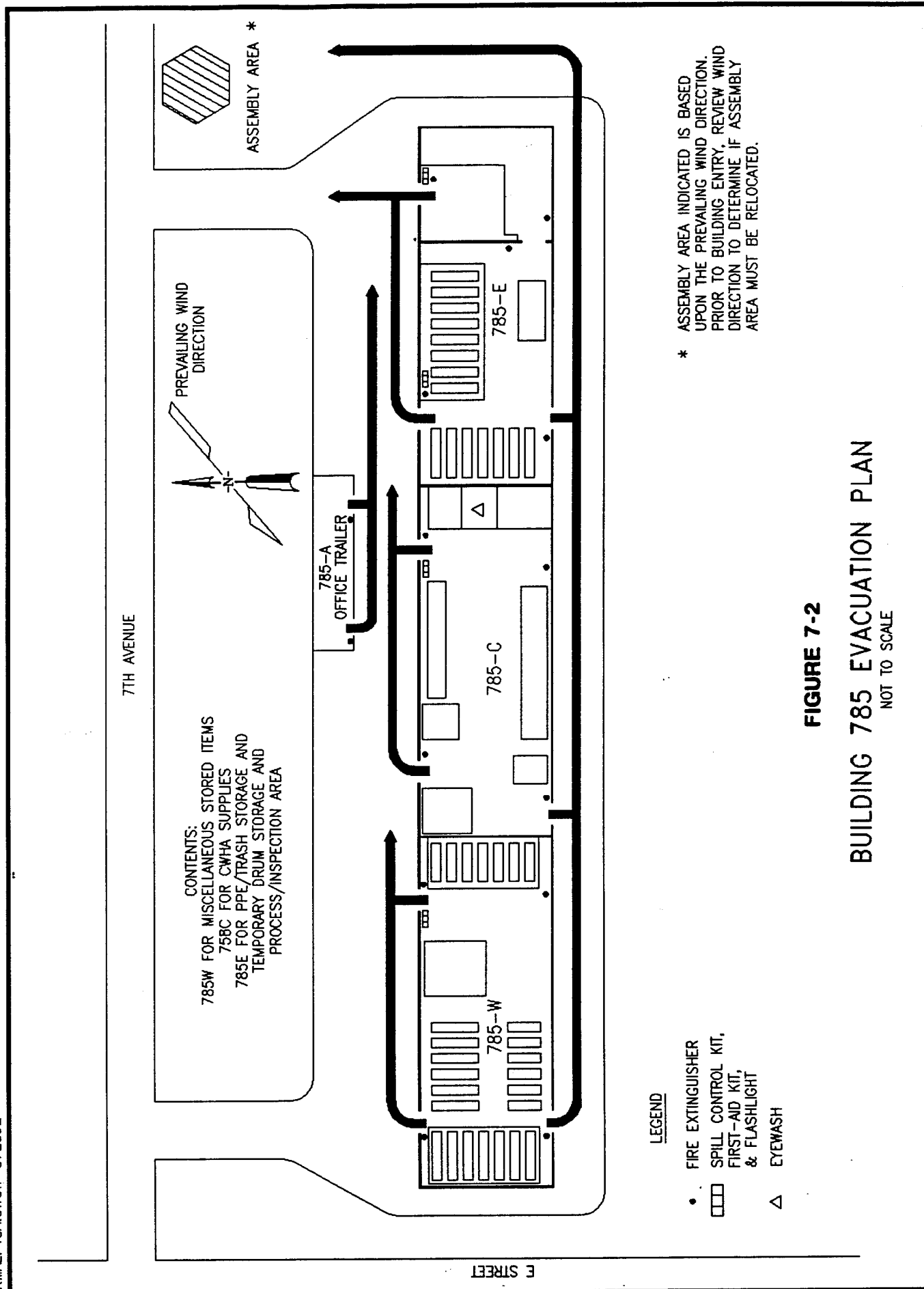


FIGURE 7-2
BUILDING 785 EVACUATION PLAN
NOT TO SCALE

7TH AVENUE

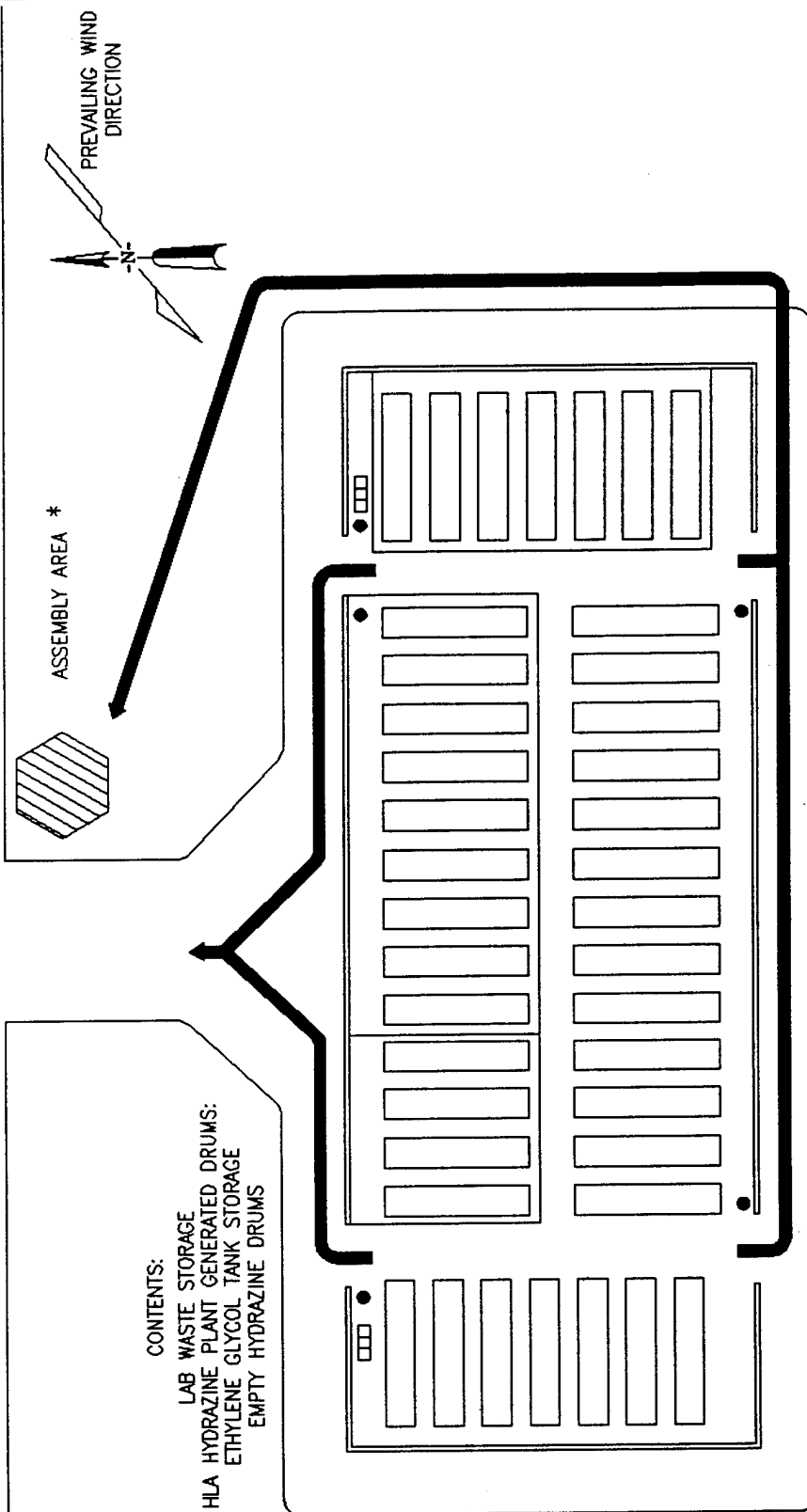


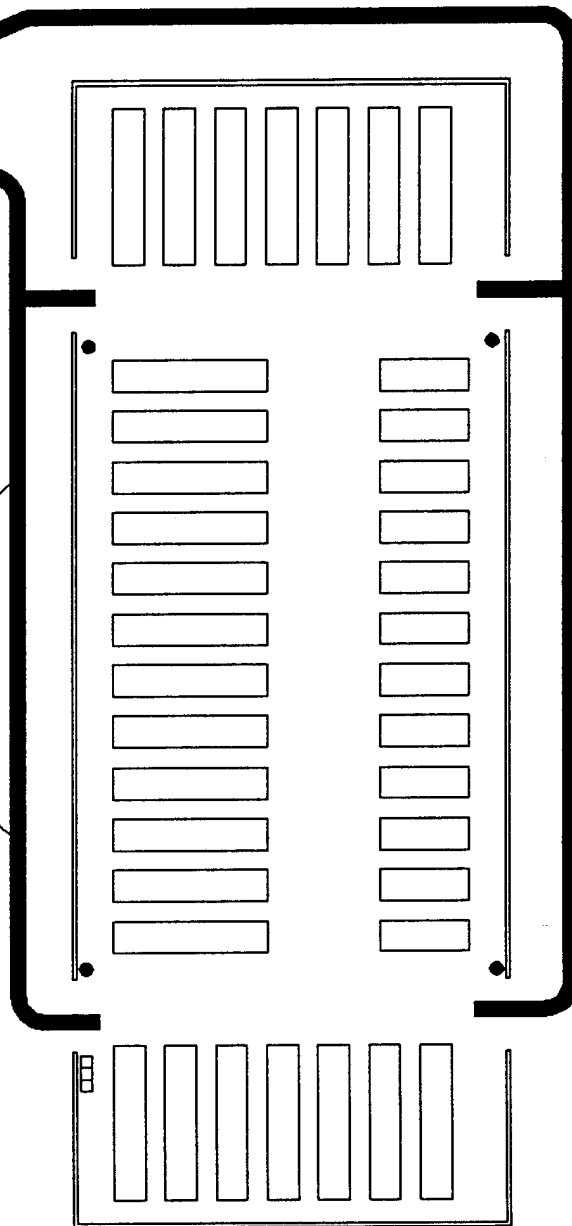
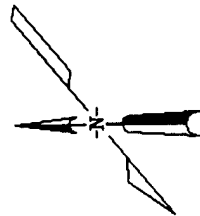
FIGURE 7-3
BUILDING 786 EVACUATION PLAN
NOT TO SCALE

7TH AVENUE

ASSEMBLY AREA*

CONTENTS:
SOIL DRUMS STORAGE
PPE DRUM STORAGE
DECONTAMINATED WELL CASING STORAGE

PREVAILING WIND
DIRECTION



LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT,
FIRST-AID KIT,
& FLASHLIGHT

* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

FIGURE 7-4
BUILDING 787 EVACUATION PLAN
NOT TO SCALE

7TH AVENUE

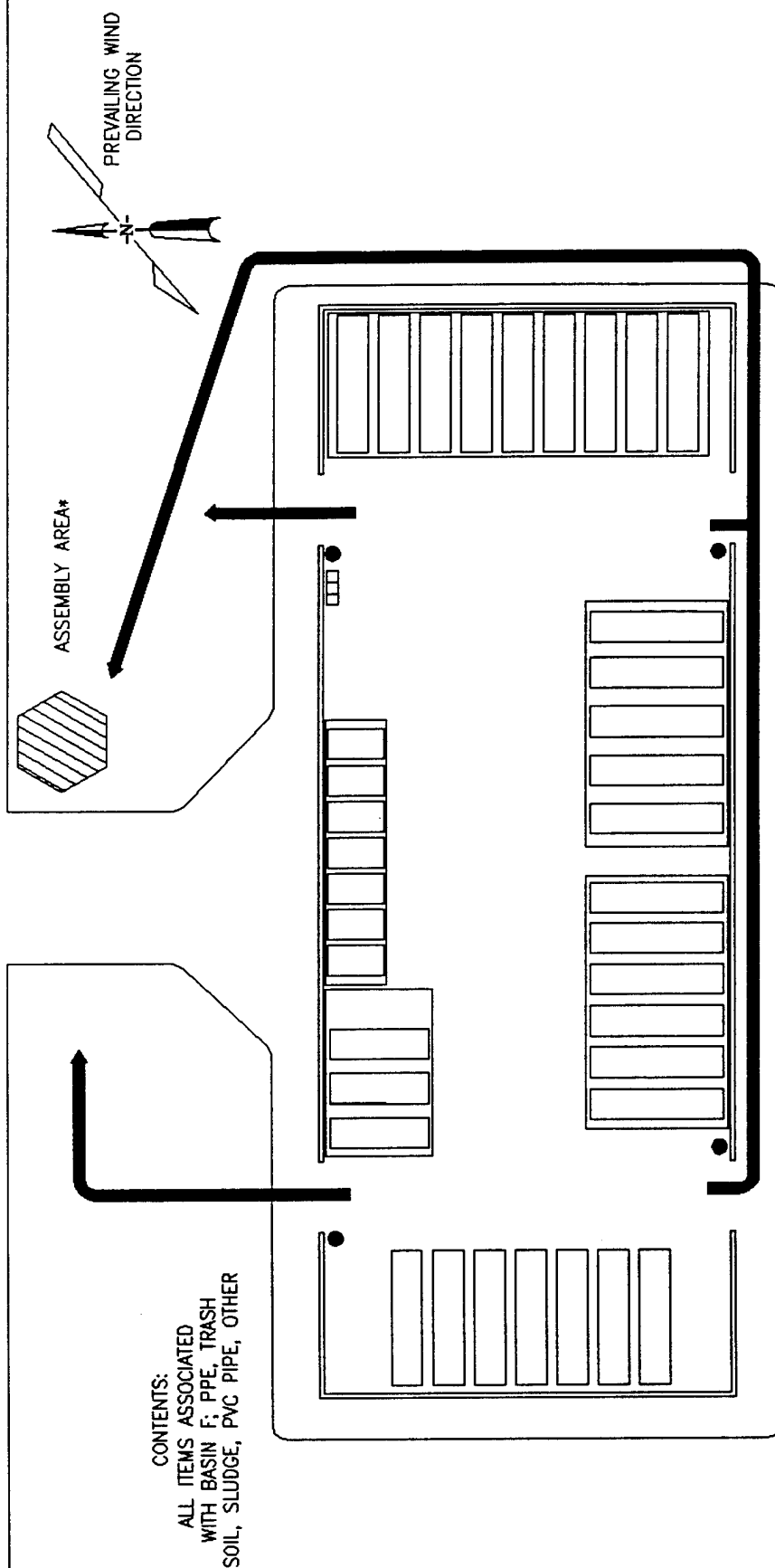
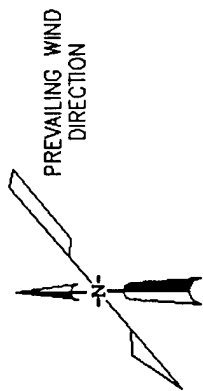
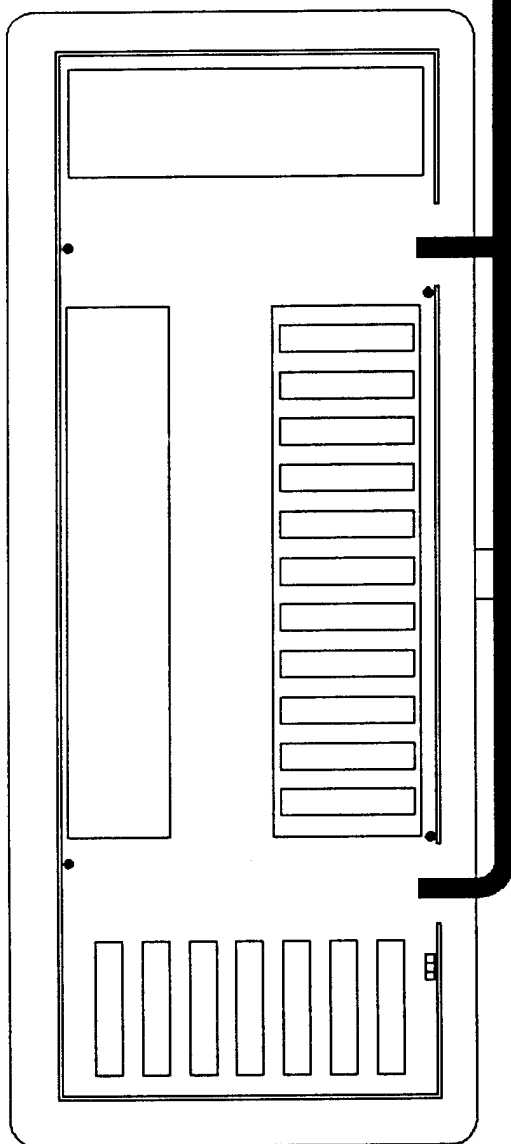
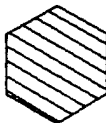


FIGURE 7-5
BUILDING 788 EVACUATION PLAN
NOT TO SCALE

CONTENTS:
SLUDGE DRUM STORAGE
OVERPACK DRUM STORAGE



ASSEMBLY AREA*



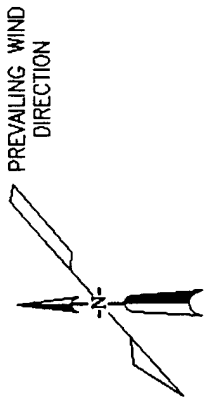
7TH AVENUE

LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT,
FIRST-AID KIT,
& FLASHLIGHT

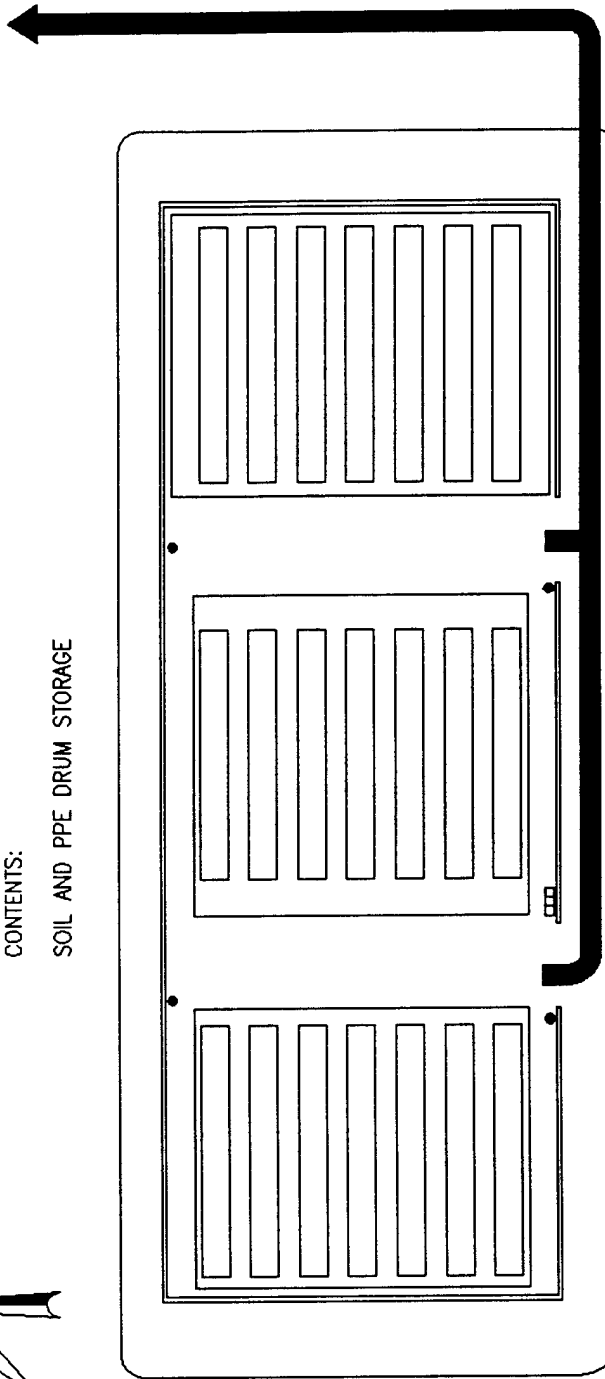
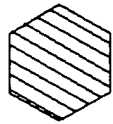
* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

FIGURE 7-6
BUILDING 791 EVACUATION PLAN
NOT TO SCALE



CONTENTS:
SOIL AND PPE DRUM STORAGE

ASSEMBLY AREA *



7TH AVENUE

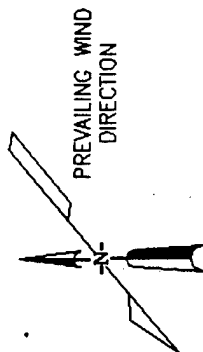
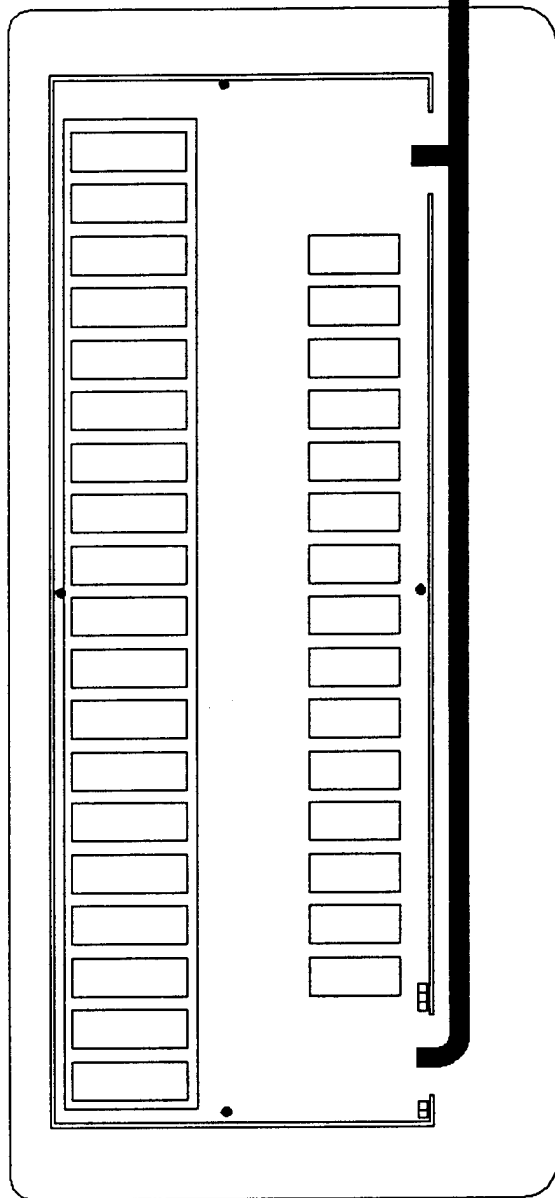
LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT,
FIRST-AID KIT,
& FLASHLIGHT

* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

FIGURE 7-7
BUILDING 792 EVACUATION PLAN
NOT TO SCALE

CONTENTS:
TANK FARM PIPING
BASIN F DRUMMED INVENTORY



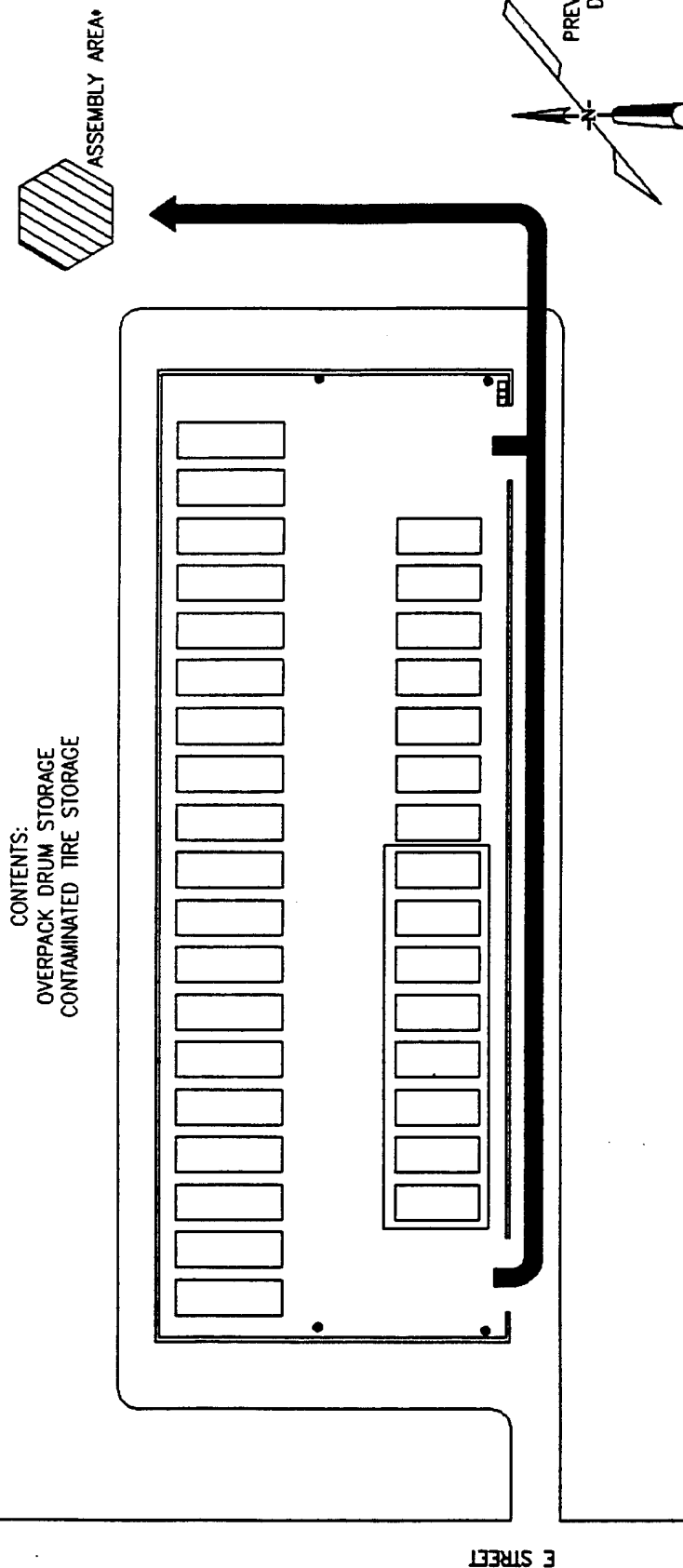
7TH AVENUE

LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT
- FIRST-AID KIT,
& FLASHLIGHT

* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

FIGURE 7-8
BUILDING 793 EVACUATION PLAN
NOT TO SCALE



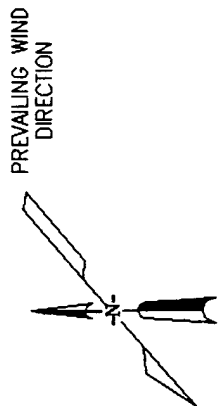
* ASSEMBLY AREA INDICATED IS BASED UPON THE PREVAILING WIND DIRECTION. PRIOR TO BUILDING ENTRY, REVIEW WIND DIRECTION TO DETERMINE IF ASSEMBLY AREA MUST BE RELOCATED.

FIGURE 7-9

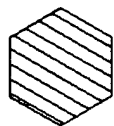
BUILDING 794 EVACUATION PLAN
 NOT TO SCALE

LEGEND

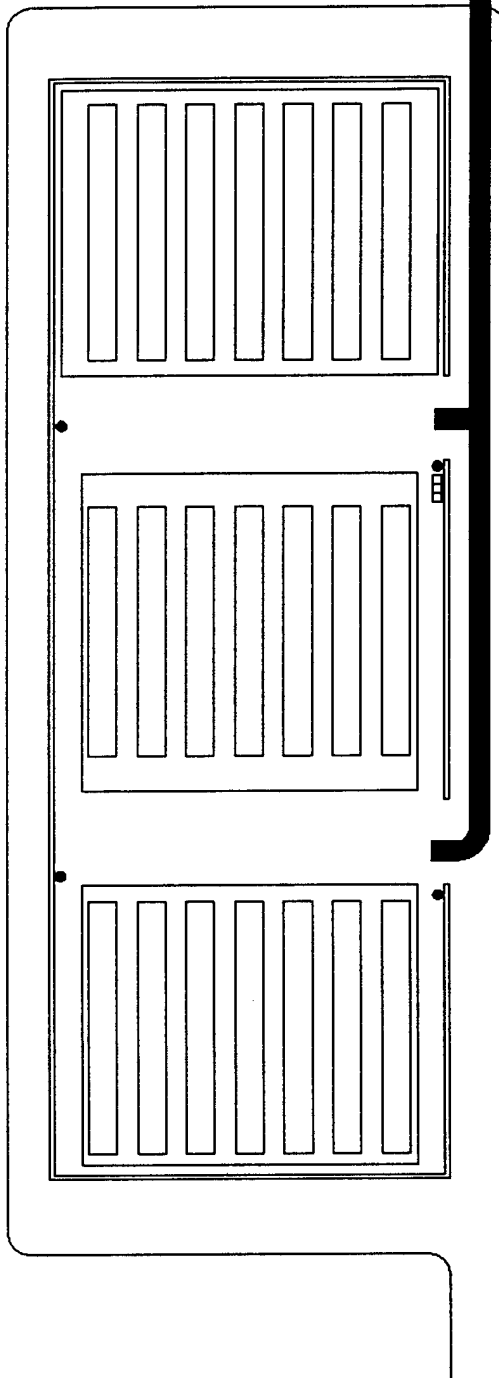
- FIRE EXTINGUISHER
- SPILL CONTROL KIT, FIRST-AID KIT, & FLASHLIGHT



ASSEMBLY AREA *



CONTENTS:
SLUDGE DRUM STORAGE



E STREET

LEGEND

- FIRE EXTINGUISHER
- SPILL CONTROL KIT,
FIRST-AID KIT,
& FLASHLIGHT

* ASSEMBLY AREA INDICATED IS BASED
UPON THE PREVAILING WIND DIRECTION.
PRIOR TO BUILDING ENTRY, REVIEW WIND
DIRECTION TO DETERMINE IF ASSEMBLY
AREA MUST BE RELOCATED.

FIGURE 7-10
BUILDING 796 EVACUATION PLAN
NOT TO SCALE

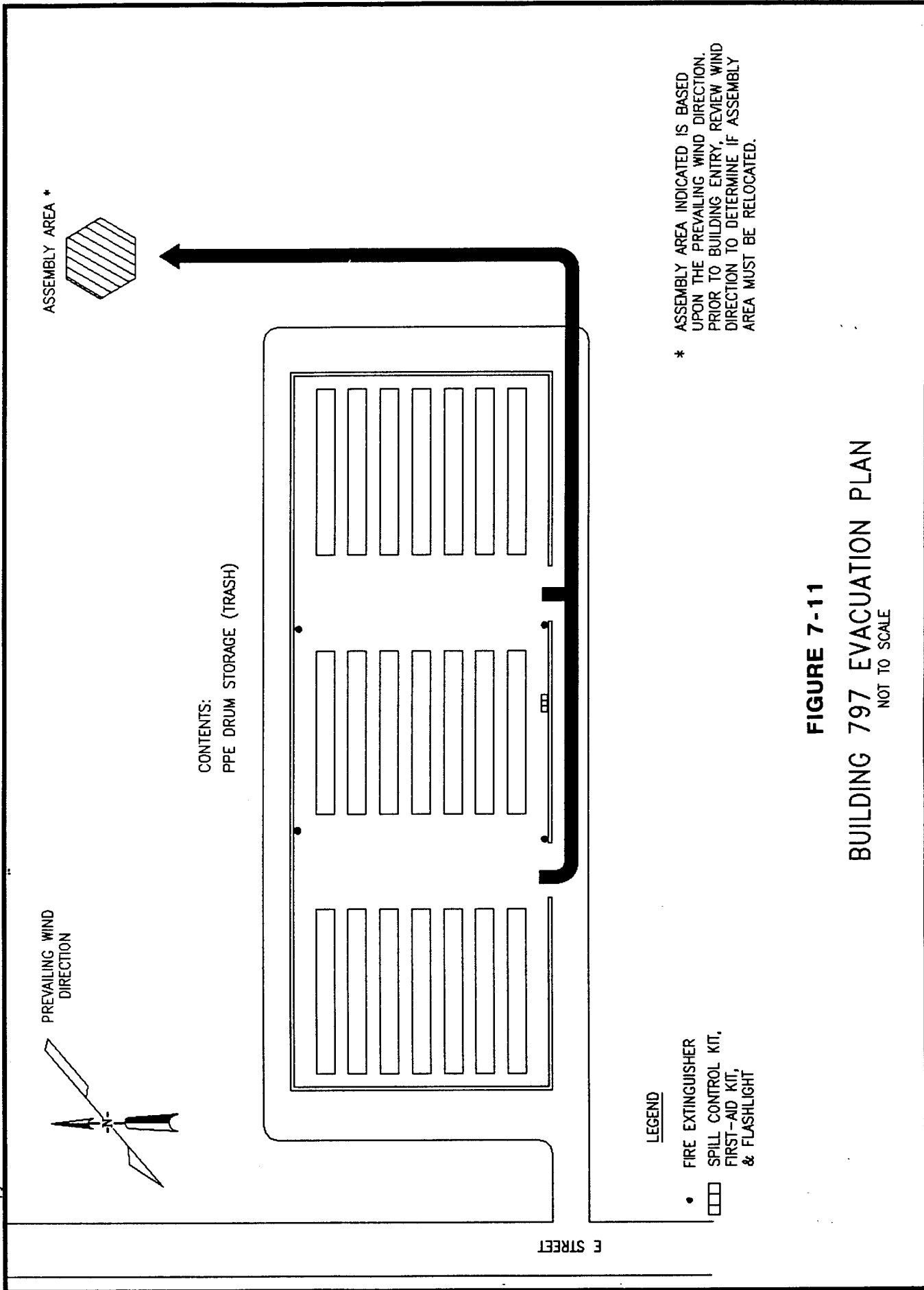
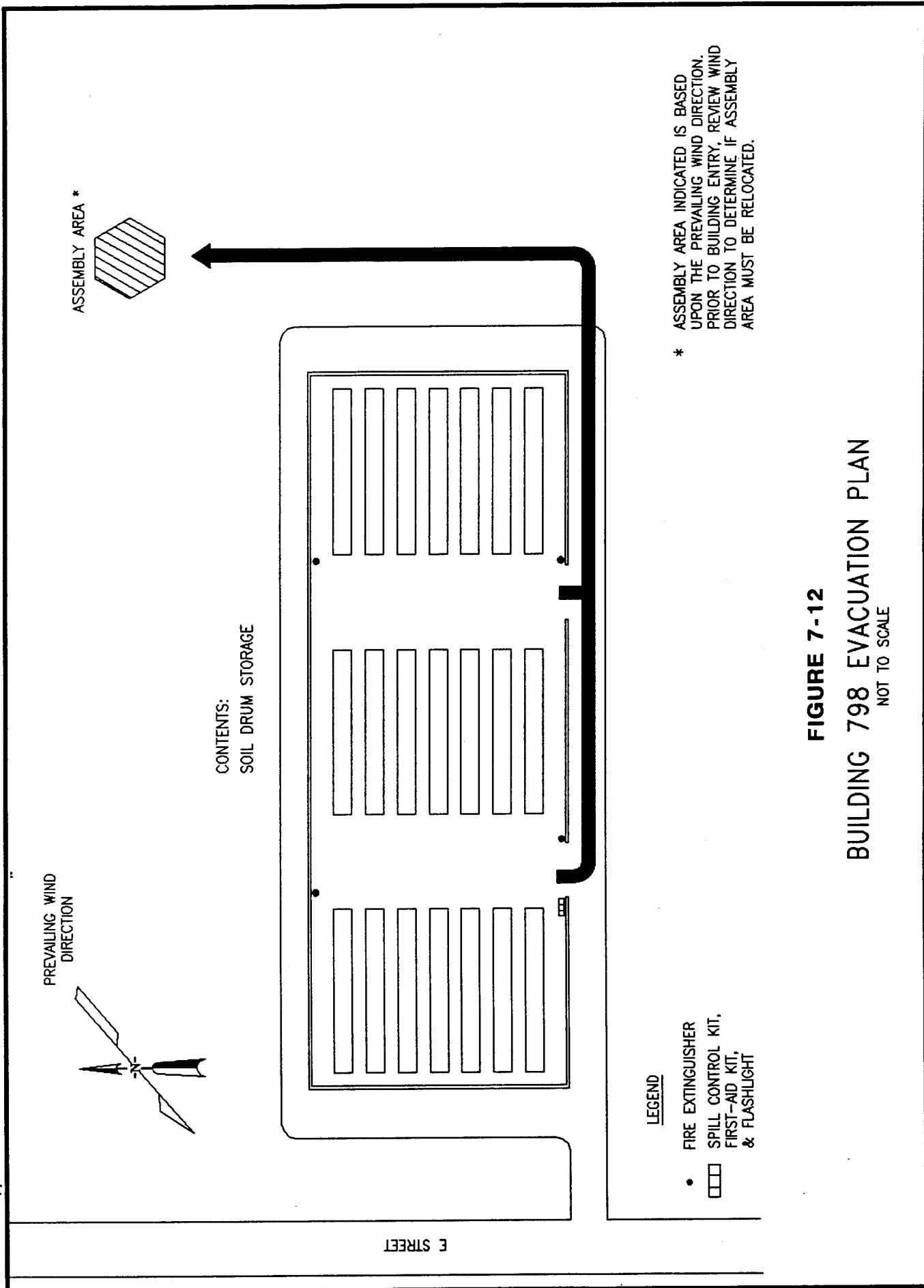
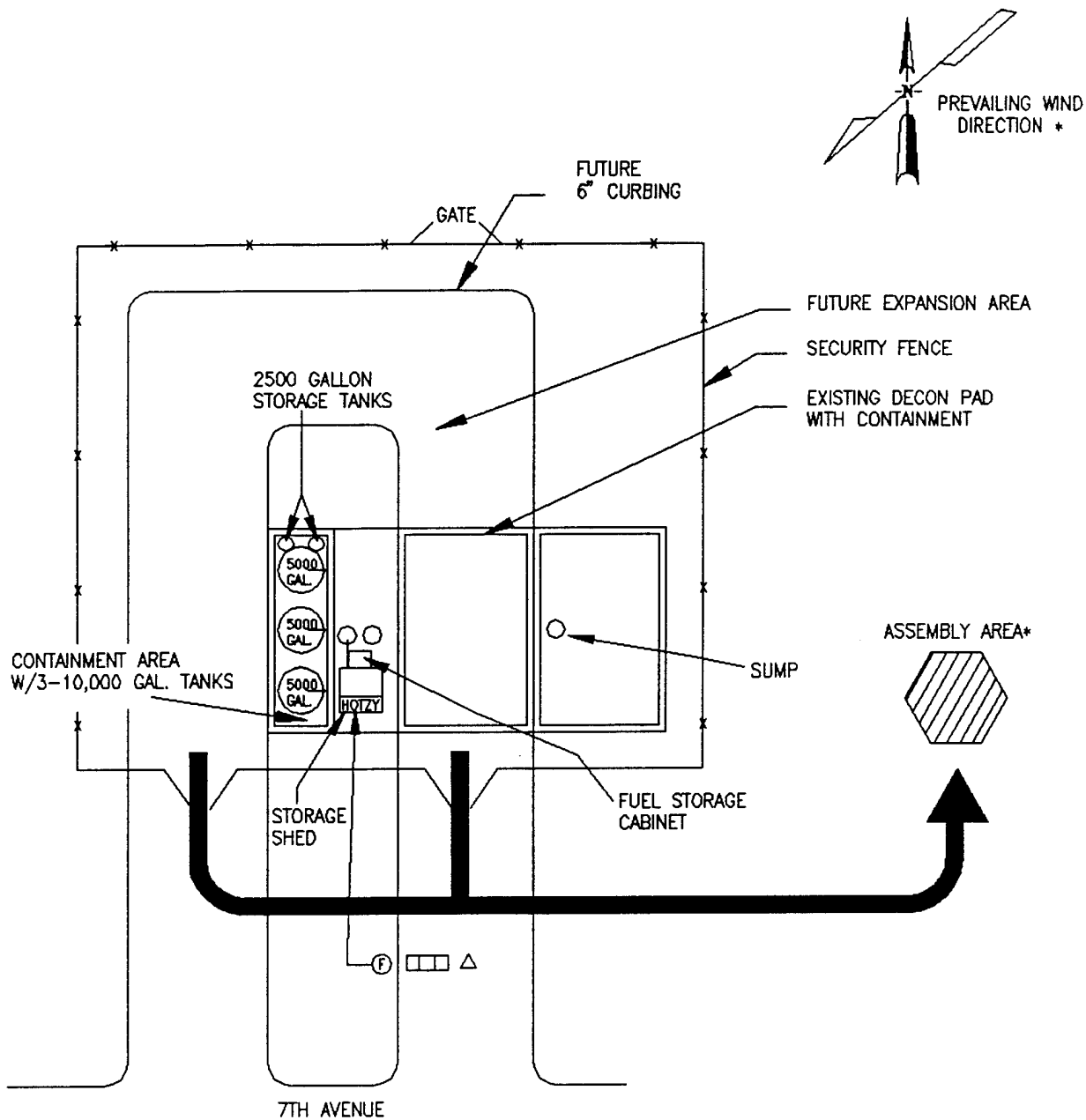


FIGURE 7-11
BUILDING 797 EVACUATION PLAN
NOT TO SCALE





LEGEND

- (F) FIRE EXTINGUISHER
- □ □ SPILL CONTROL KIT, FIRST-AID KIT, & FLASHLIGHT
- △ EYEWASH

* ASSEMBLY AREA INDICATED IS BASED UPON THE PREVAILING WIND DIRECTION. PRIOR TO BUILDING ENTRY, REVIEW WIND DIRECTION TO DETERMINE IF ASSEMBLY AREA MUST BE RELOCATED.

FIGURE 7-13
DECONTAMINATION PAD EVACUATION PLAN
 NOT TO SCALE

RMAEP01.MBJL-102391

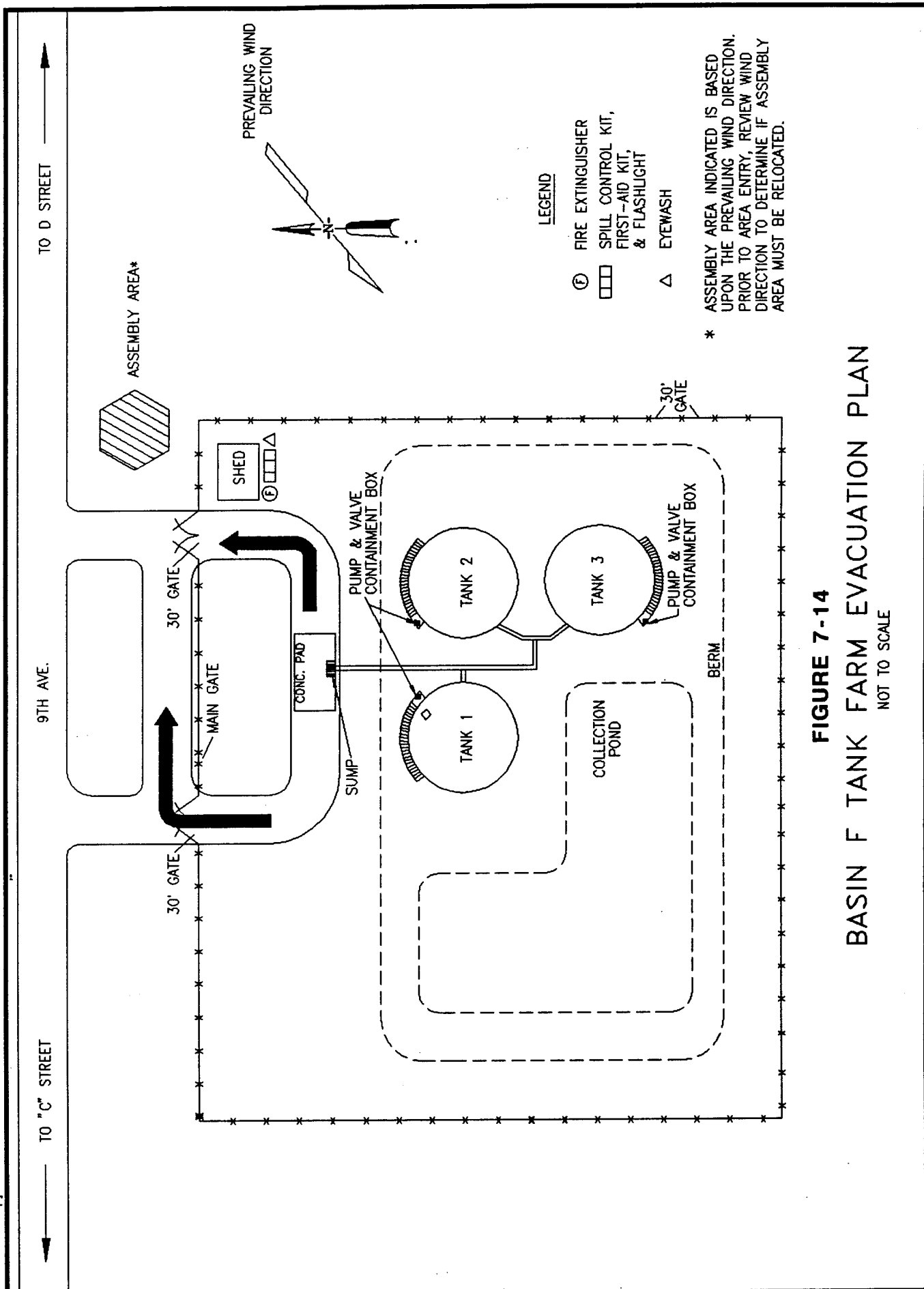
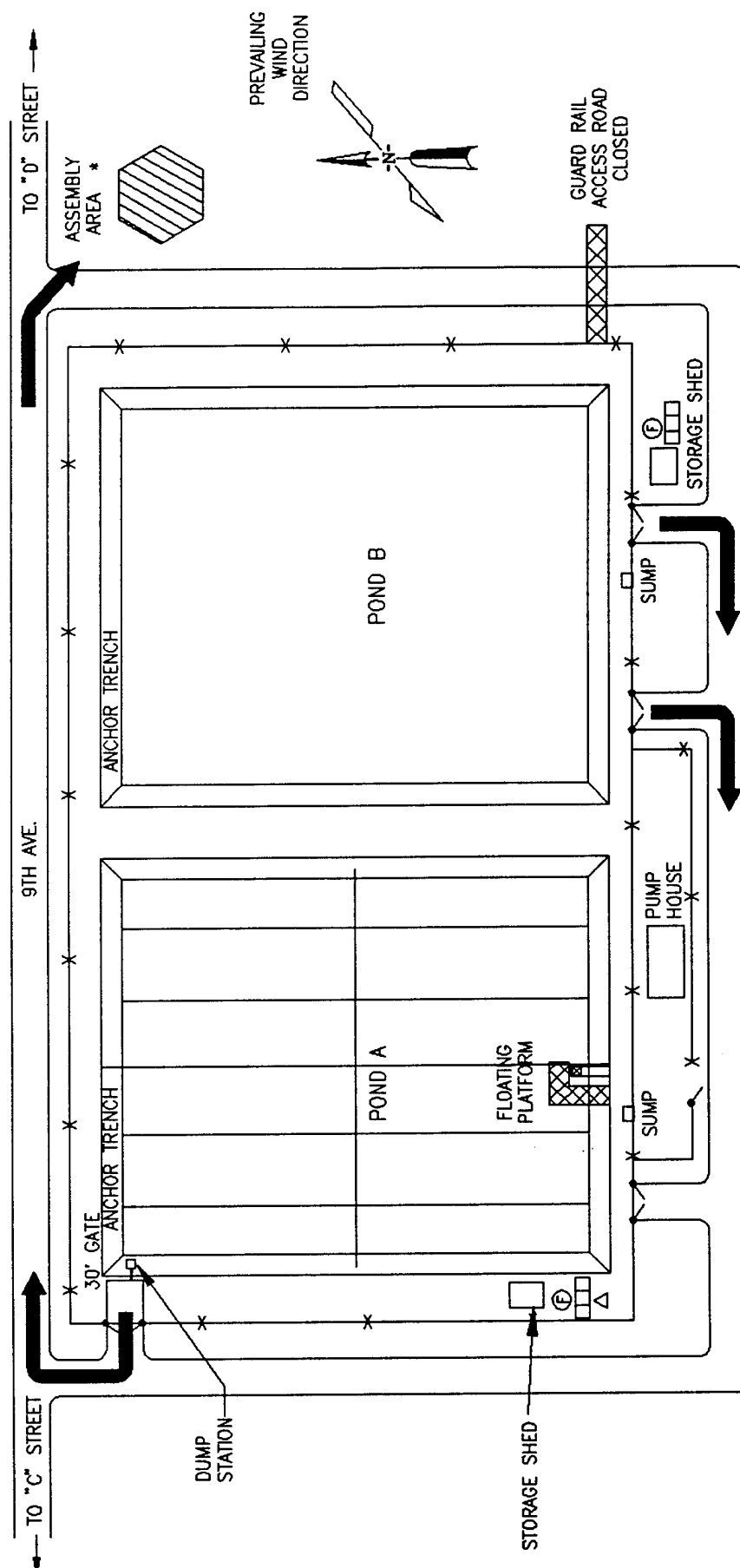


FIGURE 7-14
BASIN F TANK FARM EVACUATION PLAN
NOT TO SCALE



* ASSEMBLY AREA INDICATED IS BASED UPON THE PREVAILING WIND DIRECTION PRIOR TO AREA ENTRY, REVIEW WIND DIRECTION TO DETERMINE IF ASSEMBLY AREA MUST BE RELOCATED.

FIGURE 7-15
BASIN F, A&B POND FACILITY EVACUATION PLAN
NOT TO SCALE

LEGEND

- (f) FIRE EXTINGUISHER
 SPILL CONTROL KIT,
 FIRST-AID KIT,
 & FLASHLIGHT
 Δ EYEWASH

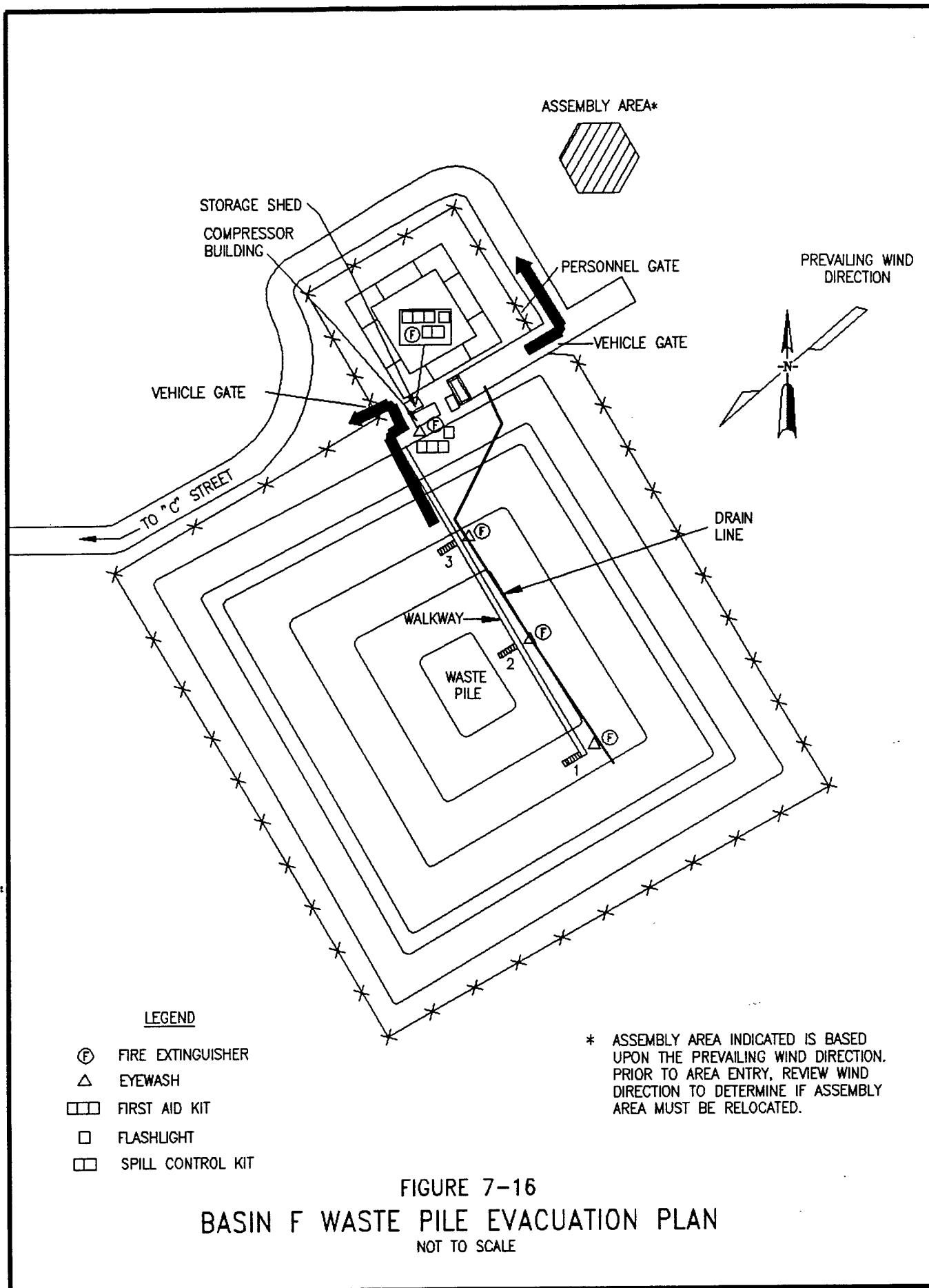
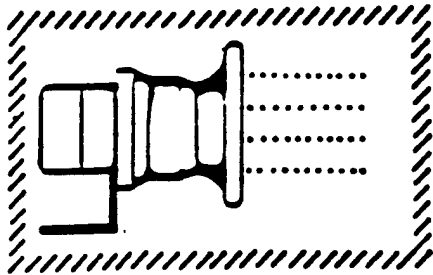
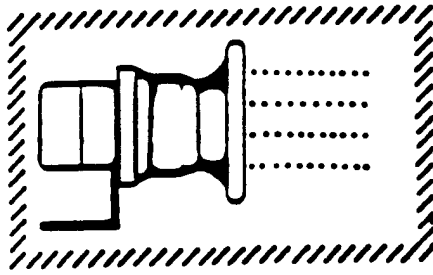
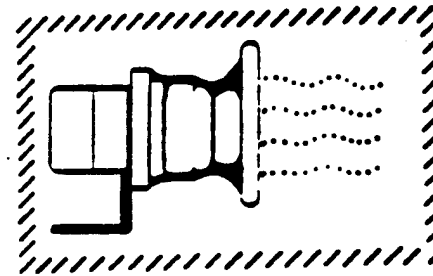


Table 7-1 RMA Site Emergency Warning Signals

Signal	Incident/Alarm Type	Response
	Steady siren - duration of 3 minutes Attention - any peacetime emergency a/ (e.g. tornadoes, etc...)	Take cover indoors
	Steady siren - duration of 30 to 45 seconds Chemical Accident/Incident b/	Installation Response Team members report to assigned station No action required from other personnel
	Wailing up and down scale signal - duration of 3 minutes Site-Wide Evacuation b/	Proceed to west gate, south gate, or North Boundary Ground Water Treatment Facility
Verbal notification	All Clear b/	Resume activities

a/ In the event of a tornado, the Fire Prevention and Protection Branch has the authority to immediately sound the site emergency signal to alert on-site personnel of danger.

b/ The situation will be assessed by the Installation On-Scene Coordinator and only through his authorization will emergency signals be sounded.

SECTION 8

ADMINISTRATION OF THE CONTINGENCY PLAN

Current and complete copies of this Contingency Plan shall be retained at the WESTON (785A) trailer the WESTON regional office, and at the RMA FPPB. A copy of this Contingency Plan will also be incorporated into Volume IV of the RMA site-wide Contingency Plan. Current and complete copies of this Contingency Plan will also be submitted to all WESTON personnel working at RMA.

This Contingency Plan must be reviewed, and immediately amended if necessary, as follows:

- If the Contingency Plan fails in an emergency.
- If the areas of operation change its design, construction, operation, maintenance, or other circumstances in ways that materially increase the potential for fires, explosions, or releases of hazardous substances or oil; or changes the response necessary in an emergency.
- If the EC or any alternates change.
- If the list of emergency equipment changes.
- If changes in the notification requirements occur.
- If the EC, FIC, ISO or their alternates addresses or phone numbers change.
- In any event, once every three years following the issuance date.

The Contingency Plan is a controlled document. In the event that the Contingency Plan is amended, the WESTON Task Manager will provide a copy of the amendment for each controlled document. It is the responsibility of the custodian of the document to keep the document up to date.

APPENDIX A
EMERGENCY CONTACTS

EMERGENCY SPILL/RESPONSE

CONTACT LIST

<u>AGENCY DEPARTMENT</u>	<u>CONTACT PERSON</u>	<u>PHONE NUMBER</u>	<u>CONTACT TIME</u>	<u>INFORMATION GIVEN/NEEDED</u>
RMA Fire Prevention and Protection Branch	Dispatch Personnel	289-0223		Location of spill. Injuries Y/N extent. Expected level of action. Estimated time of arrival.
RMA Security	Dispatch Personnel	289-0369		Location of spill. Request road closure at main intersections both sides. Estimated time of arrival.
PMRMA Contracting Officer's Representative	Dave Strang alternate Larry DeCet	289-0506 (337-0240)home 289-0124 (420-3251)home		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.
RMA On-Site Emergency Coordinator	Lt. Col. Delameter	289-0441		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.
WESTON Task Manager	C. Paul Warbington	980-6800 x312 (972-8764)home		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.
WESTON Project Safety Officer	Mike Bradshaw	980-6800 x221 (646-0173)home		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.
West HazMat Authorization by PMRMA needed	Dave Elmore or Bill McKennel or Steve Stiefater	792-2535		Request for personnel and/or equipment as needed. Estimated time of arrival.
WESTON Project Manager	Mike Witt	980-6800 x300 (421-4221)home		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.

EMERGENCY SPILL/RESPONSE

CONTACT LIST (cont.)

<u>AGENCY DEPARTMENT</u>	<u>CONTACT PERSON</u>	<u>PHONE NUMBER</u>	<u>CONTACT TIME</u>	<u>INFORMATION GIVEN/NEEDED</u>
WESTON Emergency Coordinator				Location of spill. Injuries Y/N extent. Extent of spill Expected level of action.
Primary:	Morey Engle	324-7421 cellular 1-838-1059		
Alternate #1:	Phil Card	871-0676		
Alternate #2:	Les Barnett	457-2902		
Alternate #3:	Dick Treat	426-7358		
Basin F	WESTON Field Personnel	478-8082 cellular operational hrs. only		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.
SPDA	WESTON Field Personnel	289-0425 (Field Phone)		Location of spill. Injuries Y/N extent. Extent of spill. Expected level of action.

APPENDIX B
RMA FIRE PROTECTION AND PREVENTION BRANCH

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER AD1 GSA-61

EQUIPMENT SERIAL NUMBER G61-20249

MAKE Ford

MODEL Bronco

YEAR 1989

ENGINE SIZE CU. IN. 5.0L EFI (302 CID)

ENGINE TYPE Gas

TRANSMISSION TYPE 4 Speed

DRIVE LINE TYPE 4X4

TRANSFER LINE TYPE YES-NO Yes

FUEL TANK CAPACITY 32 Gal

OIL CAPACITY 5 Qt.

TIRE SIZE 700-15LT MS

TIRE PRESSURE FRONT 35 REAR 41

TYPE OF BRAKE SYSTEM Hydraulic

VOLT SYSTEM 12 Single Battery

GROSS WEIGHT 5080 lbs.

DIMENSION LENGTH 15 FT. W. 8 Ft. H. 6 Ft. 10 In.

WHEEL BASE 8 Ft. 9 In.

WATER TANK CAPACITY N/A

FOAM TANK CAPACITY N/A

PUMP MANUFACTURER N/A

GPM N/A

SIZE OF INTAKES N/A

LOCATION OF INTAKES N/A

NUMBER OF DISCHARGES N/A

NUMBER OF BOOSTER REELS N/A

YEARLY PUMP TEST, PASS N/A FAIL N/A

PUMP TEST GPM N/A

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER AD2
EQUIPMENT SERIAL NUMBER G41-80170
MAKE Dodge
MODEL Truck-Cargo Pick-up
YEAR 1990
ENGINE SIZE CU. IN. 318 V-8
ENGINE TYPE Gas
TRANSMISSION TYPE 3 Speed
DRIVE LINE TYPE 4X2
TRANSFER LINE TYPE YES-NO No
FUEL TANK CAPACITY 22 Gal
OIL CAPACITY 5 Qt.
TIRE SIZE P235 75R 15 M&S
TIRE PRESSURE FRONT 35 PSI REAR 35 PSI
TYPE OF BRAKE SYSTEM Hydraulic
VOLT SYSTEM 12
GROSS WEIGHT 5500 lbs.
DIMENSION LENGTH 16 Ft. 4 In. W. 7 Ft. 10 In. H. 5 Ft. 10 In.
WHEEL BASE 9 Ft. 8 In.
WATER TANK CAPACITY N/A
FOAM TANK CAPACITY N/A
PUMP MANUFACTURER N/A
GPM N/A
SIZE OF INTAKES N/A
LOCATION OF INTAKES N/A
NUMBER OF DISCHARGES N/A
NUMBER OF BOOSTER REELS N/A
YEARLY PUMP TEST, PASS N/A FAIL N/A
PUMP TEST GPM _____

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-236 AT1
EQUIPMENT SERIAL NUMBER CN 2772
MAKE Chevrolet
MODEL K-30 / 3500
YEAR 1987
ENGINE SIZE CU. IN. 6.2 Lit. (380 Cu. In.)
ENGINE TYPE Diesel
TRANSMISSION TYPE 4 Speed L-4
DRIVE LINE TYPE 4X4
TRANSFER LINE TYPE YES-NO Yes
FUEL TANK CAPACITY 16 Gal
OIL CAPACITY 5 Qt.
TIRE SIZE LT 215/85 R16 M&S
TIRE PRESSURE FRONT 65 PSI REAR 65 PSI
TYPE OF BRAKE SYSTEM Hydraulic with Mico
VOLT SYSTEM 12 Battery-Twin
GROSS WEIGHT 11,280 lbs.
DIMENSION LENGTH 19 Ft. 3 In. W. 8 Ft. 2 In. H. 7 Ft. 3 In.
WHEEL BASE 11 Ft. 4 In.
WATER TANK CAPACITY 250 Gal.
FOAM TANK CAPACITY N/A
PUMP MANUFACTURER W.S. Darley Company
GPM 250 GPM @ 150 PSI
SIZE OF INTAKES Driver Side Pump Panel, Rear
LOCATION OF INTAKES 1-3 In. - 2 1/2 In.
NUMBER OF DISCHARGES 1-Rear 1 In. Line
NUMBER OF BOOSTER REELS N/A
YEARLY PUMP TEST, PASS N/A FAIL N/A
PUMP TEST GPM N/A For 1988, 1989

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-235 EN2'
EQUIPMENT SERIAL NUMBER NK 03LY
MAKE American Air Filter Co. Inc.
MODEL 530-C
YEAR 1973
ENGINE SIZE CU. IN. 465
ENGINE TYPE Diesel
TRANSMISSION TYPE 5 Speed Manual
DRIVE LINE TYPE 6X6
TRANSFER LINE TYPE YES-NO Yes
FUEL TANK CAPACITY 50 Gal
OIL CAPACITY 10 Gal.
TIRE SIZE 900 X 20
TIRE PRESSURE FRONT 65 PSI REAR 55 PSI
TYPE OF BRAKE SYSTEM Hydraulic
VOLT SYSTEM 24
GROSS WEIGHT 23,500 lbs.
DIMENSION LENGTH 22 Ft. 9 In. W. 9 Ft. 8 In. H. 8 Ft. 11 In.
WHEEL BASE 12 Ft. 11 In.
WATER TANK CAPACITY 400 Gal.
FOAM TANK CAPACITY 40 Gal.
PUMP MANUFACTURER Waterous
GPM 750 GPM 2 Stage
SIZE OF INTAKES 2 - 4 1/2 1 - 2 1/2
LOCATION OF INTAKES 1-4 In. 1-2 1/2 Rt Side 1-4 1/2 Lt Side
NUMBER OF DISCHARGES 3-2 1/2 1-1 1/2 Top Side Hose Bed
NUMBER OF BOOSTER REELS 1 Left and 1 Right Side, 1" Lines
YEARLY PUMP TEST, PASS _____ FAIL _____
PUMP TEST GPM _____

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-168 TK1
EQUIPMENT SERIAL NUMBER CA 9465
MAKE GMC
MODEL GMC 7500 Diesel
YEAR 1974
ENGINE SIZE CU. IN. V6-53N (318 Cu. In.)
ENGINE TYPE Diesel
TRANSMISSION TYPE 5 Speed
DRIVE LINE TYPE 6X6
TRANSFER LINE TYPE YES-NO Yes
FUEL TANK CAPACITY 50 Gal
OIL CAPACITY 6 1/2 Gal.
TIRE SIZE 900-20
TIRE PRESSURE FRONT 95 PSI REAR 85 PSI
TYPE OF BRAKE SYSTEM Air
VOLT SYSTEM 12
GROSS WEIGHT 41,500 lbs.
DIMENSION LENGTH 24 Ft. 5 In. W. 8 Ft. 10 In. H. 10 Ft. 8 In.
WHEEL BASE 15 Ft. 9 In.
WATER TANK CAPACITY 2200 Gal.
FOAM TANK CAPACITY N/A
PUMP MANUFACTURER Hale Pump
GPM 250
SIZE OF INTAKES 1-2 1/2
LOCATION OF INTAKES Rear
NUMBER OF DISCHARGES 1-2 1/2
NUMBER OF BOOSTER REELS N/A
YEARLY PUMP TEST, PASS N/A FAIL N/A
PUMP TEST GPM N/A

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-195 AM1
EQUIPMENT SERIAL NUMBER CL 1813
MAKE Chevy
MODEL 2 Dr 1 Ton AMB Box Custom 30
YEAR 1984
ENGINE SIZE CU. IN. 454 Cu. In.
ENGINE TYPE Gas
TRANSMISSION TYPE 3 Speed Auto
DRIVE LINE TYPE 4X2
TRANSFER LINE TYPE YES-NO No
FUEL TANK CAPACITY Dual Tanks 20 Gal. Each
OIL CAPACITY 5 Qt.
TIRE SIZE 7.5-16-Lt
TIRE PRESSURE FRONT 50 PSI REAR 50 PSI Dual
TYPE OF BRAKE SYSTEM Hydraulic
VOLT SYSTEM 12 Battery Twin
GROSS WEIGHT _____
DIMENSION LENGTH 21 Ft. 8 In. W. 8 Ft. 10 In. H. 7 Ft. 9 In.
WHEEL BASE 13 Ft. 4 In.
WATER TANK CAPACITY N/A
FOAM TANK CAPACITY N/A
PUMP MANUFACTURER N/A
GPM N/A
SIZE OF INTAKES N/A
LOCATION OF INTAKES N/A
NUMBER OF DISCHARGES N/A
NUMBER OF BOOSTER REELS N/A
YEARLY PUMP TEST, PASS N/A FAIL N/A
PUMP TEST GPM N/A

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-194 AM2

EQUIPMENT SERIAL NUMBER CA 3030

MAKE _____

MODEL _____

YEAR _____

ENGINE SIZE CU. IN. _____

ENGINE TYPE _____

TRANSMISSION TYPE _____

DRIVE LINE TYPE _____

TRANSFER LINE TYPE YES-NO _____

FUEL TANK CAPACITY _____

OIL CAPACITY _____

TIRE SIZE _____

TIRE PRESSURE FRONT _____ REAR _____

TYPE OF BRAKE SYSTEM _____

VOLT SYSTEM _____

GROSS WEIGHT _____

DIMENSION LENGTH _____ W. _____ H. _____

WHEEL BASE _____

WATER TANK CAPACITY _____

FOAM TANK CAPACITY _____

PUMP MANUFACTURER _____

GPM _____

SIZE OF INTAKES _____

LOCATION OF INTAKES _____

NUMBER OF DISCHARGES _____

NUMBER OF BOOSTER REELS _____

YEARLY PUMP TEST, PASS _____ FAIL _____

PUMP TEST GPM _____

**ROCKY MOUNTAIN ARSENAL
FIRE PROTECTION AND PREVENTION BRANCH
VEHICLE DATA SHEET**

FISCAL YEAR 1990

EQUIPMENT IDENT NUMBER RMA-237 Engine-1
EQUIPMENT SERIAL NUMBER _____
MAKE GMC-7000
MODEL GMC-E-One
YEAR 1986
ENGINE SIZE CU. IN. 8.2 Lit. Diesel (502 Cu. In.)
ENGINE TYPE Diesel
TRANSMISSION TYPE 4 Speed Auto Allison
DRIVE LINE TYPE 4X4
TRANSFER LINE TYPE YES-NO Yes
FUEL TANK CAPACITY 50 Gal. Diesel
OIL CAPACITY 10 Gal.
TIRE SIZE 10X20
TIRE PRESSURE FRONT 85 PSI REAR 75 PSI
TYPE OF BRAKE SYSTEM Air
VOLT SYSTEM 12
GROSS WEIGHT 26,500 lbs.
DIMENSION LENGTH 18 Ft. 8 In. W. 9 Ft. 4 In. H. 9 Ft. 6 In.
WHEEL BASE 15 Ft. 10 In.
WATER TANK CAPACITY 750 Gal.
FOAM TANK CAPACITY 40
PUMP MANUFACTURER Hale Pump
GPM 1000 Single Stage, 250 Single Stage
SIZE OF INTAKES 2-6 In. 1-2 1/2
LOCATION OF INTAKES 1-6 In Rt. Lt. Side, 1-2 1/2 Rt. Side
NUMBER OF DISCHARGES 5-2 1/2 1-150-1000 GPM Deck Gun Top
NUMBER OF BOOSTER REELS 2-1 In. Lines Top Lt. Rt. Side
YEARLY PUMP TEST, PASS N/A FAIL N/A
PUMP TEST GPM N/A